

THE SANATORIUM

AND THE

TREATMENT OF PULMONARY TUBERCULOSIS

THE QUESTION CONSIDERED IN ITS THERAPEUTICAL AND ECONOMIC ASPECTS

INTRODUCTION.

sent recently to a group of recognised authorities the treatment of pulmonary tuberculosis the following are of the points on which the medical profession, through that profession the public, require early treatment:—

Medical officers of health are constantly asked to advise as to the neighbourhood would be benefited by the erection of a sanatorium for pulmonary tuberculosis, and medical men are similarly consulted either as to the suitability of a certain patient for such a sanatorium or the advisability of subscribing to a fund for providing one in the neighbourhood. On these points they find it difficult to reply which is backed by solid medical opinion.

Unpublishing answers from medical men whom both the lay and lay world know as authorities to the few questions we hope to furnish answers which will be of the time being very valuable. We quite understand that finite answers cannot yet be given upon many important points and that we have left many issues untouched, of which we hope that you will give us information.

Experience demonstrated the therapeutic value of sanatorium treatment generally?

Successful results obtained equally (a) in well-to-do; (b) in the working classes?

For the working classes must an elaborate system of treatment be combined; and are convalescent homes sufficient to prolong the treatment?

What are the arguments for believing that the social value of sanatoriums will be great and wide-spread?

Sanatoriums are considered by some people as places where severe cases may be segregated and by others as where incipient cases may be cured. Ought there to be separate buildings?

It is a medical officer to say when he is asked by a county authority or a private philanthropist is it best for the tuberculous by building a costly sanatorium?

What we had only touched upon certain aspects of this enormous large subject in putting these questions to our collaborators, and we did not desire to pin any one to the task of answering according to category. As seen by the essays which follow, the various

writers have taken their own line in reply, and we are sure that we anticipate the verdict of our readers in saying that an extremely valuable collective opinion is the result.

THE THERAPEUTIC VALUE OF THE TREATMENT OF CONSUMPTION ON SANATORIUM LINES.

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I HAVE no doubt whatever of the therapeutic value of the treatment of consumption on sanatorium lines which need not necessarily be carried out in sanatoriums. It supplies the hygienic conditions upon which all therapeutic measures must be based, the keynote of the treatment being the maintenance of the patient in an aseptic atmosphere and the provision of all hygienic measures of feeding, rest, and exercise adapted to his case which are calculated to raise his vital resistance to the highest pitch attainable. Whilst there is room for much advance upon sanatorium treatment there is none for retrogression from it. It has been led up to gradually as experience of the advantages of fresh-air conditions has grown and it may now be regarded as firmly established. Indeed, the principle has concurrently and irrevocably grown to be recognised as the basis of treatment not only for consumption but for all diseases.

The employment of sanatoriums in the treatment of phthisis is now recognised as essential for the great majority of cases, for the reason that few people even amongst those who are fairly well to do can command those conditions of locality, house facilities, garden space, nursing help, and medical supervision which are the important elements of the treatment. And even amongst the more favoured minority there are some who, having country houses with suitable aspects and other requirements, yet find the family conditions of life and temperament incompatible with restful home treatment. As regards the working-classes, so ostracised has consumption become by our hospitals, institutions, and convalescent homes that there is no alternative between the workman's own home or the scanty special hospital accommodation that exists and treatment in sanatoriums. And, indeed, the sanatorium, the ideal place for the treatment of the poor suffering from consumption provided the cases can be properly selected, can scarcely yet be said to have been fairly started for them in this country. It is, then, difficult yet to compare experience with regard to the results of treatment in the industrial cases with those of the upper

and middle classes; and there is the large class of office workers and shop attendants for whom there is little, if any, accommodation at all in the way of efficient sanatoriums.

In the organisation of sanatoriums for the industrial classes—and the point should not be forgotten with all classes—the demoralising effect of six months' idleness which is apparent in most cases after a "rest cure" must be taken into careful account. This can, and must be in some measure at least, counteracted by organising exercises in the shape of some kind of industrial work regulated to the powers of each individual. An attempt in this direction is being made with a considerable measure of success at the Brompton Hospital sanatorium at Frimley and will no doubt be alluded to more particularly by some of my colleagues.

The fact must be squarely faced that impossibilities cannot be effected with phthisis in any grade of the social scale. The majority of patients cannot return to the conditions under which they have broken down without the probability of relapse. They must think out, and their friends for them, a new line of life. Convalescent homes are of no use except to carry on the treatment and to give time with more assured health to reorganise the future mode of life. Advisory committees in connexion with charitable organisation bodies may do much in aid of finding, or starting, or advising with regard to new lines of work for those who have attained arrest or recovery under treatment. Many may, through friends or of their own initiative, find conditions under which they may resume work and keep health; others must relapse until the end comes. There are good grounds, however, for taking a sanguine view of the future as regards consumption amongst the poor. If preventive measures are wisely, patiently, and steadily persevered with, the cases for treatment will gradually diminish to numbers manageable for being more permanently dealt with.

The question of any system of insurance being utilised in the treatment of the consumptive industrial classes is a difficult one which I have touched upon elsewhere,¹ but as I take it that the object of these articles is to elicit opinions warranted by personal experience I will not dwell upon the subject here. Considering, however, the enormous expense to the rates involved by tuberculous disease, the large demands through it upon benefit societies, the great cost of it from mortality-claims to industrial assurance societies,² and the strain it involves upon charitable organisations, it can scarcely be doubted that a combination of funds from such sources might be advantageously arranged towards securing conditions for a diminished death-rate and increased longevity.

Cases of consumption must be classified into those suitable for homes, hospitals, and sanatoriums. The sanitary conditions for each class must, of course, be, so far as practicable, on equally good lines, but it is absolute cruelty to send some cases to sanatoriums as now constituted, whilst it is equally unjustifiable to keep others out. Homes or comfortable asylum conditions are required for advanced cases where symptoms may be treated and their last days made comfortable and happy. It is not enough, however, to relegate advanced cases of consumption to infirmaries or homes for the dying with a view rather to their removal from a sphere of harmfulness to others than for their own advantage and efficient treatment. These poor people should be provided for in hospitals and homes under conditions and with full medical treatment adapted to their cases. Not a few apparently hopeless cases make surprising rallies and

acquire complete quiescence. Such cases, abandoned perhaps by orthodox practitioners, make the reputations of quacks who lucratively abide the processes of Nature's surprising recuperative powers. But for those who are doomed to continue a downward course watchful medical treatment and nursing care can infinitely allay their discomforts and sufferings. They require at our hands at least as much consideration as the more promising cases, and a percentage of beds should be provided for them at each special hospital and at each general hospital in order that nurses and students may learn how to treat them. Bacteriological observation does not justify the view that advanced cases with copious expectoration are attended with more danger from infection than earlier cases. Sputum examinations would warrant a contrary view.

Hospital management is again necessary for cases under diagnosis in acute stages or complications requiring close observation, nursing, and special medical or surgical treatment. For incipient and localised disease and for cases, many of which have passed through a short period of treatment in hospitals or in their own homes, the sanatorium treatment is best adapted. With the complete establishment of sanatorium treatment there are other therapeutic measures yet to be adopted, some of which have not yet been fully if at all evolved, such as the various uses of the creosote class of drugs, regulated tuberculin injections, organised hygienic exercises, and other measures.

There is an unfortunate, and, I am convinced, an exaggerated, belief in the person to person infectiousness of phthisis which is growing under the advocacy of sanitarian and antituberculosis societies. Admitting most of the preliminary data as to the origin of the disease by bacillary infection, the certainty of producing it in a large proportion of cases under experimental conditions of spraying with tuberculous sputum, and the concentrated prevalence of the disease under conditions of overcrowding and insanitation, I am still totally unable from my experience as a physician to endorse the view of tuberculosis being more than rarely acquired directly by one person from another. Were it so the aggregation of consumptive patients in sanatoriums or hospitals would be quite unjustifiable. And it is under this growing belief of such kind of infectiousness that it is already becoming very difficult to induce intelligent people to submit to treatment in sanatoriums. The reverse is the truth, however; patients with consumption are far safer in sanatoriums or hospitals than in their own homes. Medical men and servants administer sanatoriums with impunity. And why? The question would be unanswerable in accordance with the now too prevalent view of the direct infectiousness of tubercle. The reconciliation of the two views is, I am convinced, to be found in the fact that the tuberculous infection is, except under experimental conditions, rather a distributed one than direct from person to person. It is from the insanitary surroundings of patients rather than from patients themselves that infection is acquired. "It is in darkness and filth that tubercle flourishes."³ As with the poison of most other acute specific infectious diseases, the tubercle bacillus is greatly increased in virulence when mingled with other dirt and dust microbes; under clean and sanitary conditions it is not to be feared.

With regard to the final question as to the value of costly sanatoriums, I can only say that the more cheaply we can get our results the better. With ample ground space and for the treatment of incipient or convalescent cases the hut system may be the best. For considerable numbers, perhaps exceeding 20, the sanitation, administration, and supervision become under this system difficult and costly; with really large numbers, exceedingly

¹ Lecture on the Prevention of Consumption, Proceedings of the Twenty-second Congress of the Royal Sanitary Institute held at Glasgow, 1904. Journal of the Institute, 1905, p. 350.

² Dr. Hoffmann estimates that some half a million dollars a year are lost to the American Prudential Assurance Company by the consumptive death-rate. Transactions of the British Congress on Tuberculosis, pp. 364 and 374.

³ "The Prevention of Consumption,"

100, I should say impossible: large institutions with central administration become necessary. The provision of a cottage sanatorium of, say, four beds for each group of three or four villages in country districts, with a few, perhaps half a dozen or a dozen, beds, with special hygienic provisions in the local infirmaries for advanced cases, would probably be economical and of great advantage in educating local medical men and keeping up their interest in the treatment of consumption. Consulting medical aid and supervision could be easily arranged for from the county towns. In this way the sanatorium treatment of the disease might with great advantage be distributed and cases recognised and treated in earlier stages. But there would still remain the need for larger sanatoriums in connexion with the big towns.

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THE SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS.

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1. THERE can be no doubt as to the therapeutic value of sanatorium treatment. It has been exemplified in many cases which have come under my observation. Everything depends, however, on the skill and care with which the treatment is adjusted to individual cases; something also on situation and climatic advantages.

2. I have no personal experience of the results in the working classes, but the sanatorium experience of Germany, which is very favourable, relates to the industrial classes. In this country working men do not come under observation and enter sanatoriums at an early stage and can rarely remain under treatment long enough. While in the sanatorium they improve rapidly.

3. In order that working men may be induced to enter a sanatorium early and to remain for a sufficient length of time, it is obviously necessary that some provision should be made for the maintenance of the family. Rather than see his wife and children starve, a man will keep at his work as long as possible and return to it as soon as possible, regardless of the consequences to himself. How such provision is to be secured is a difficult question. The organisation of the working classes in this country is not such as to lend itself to compulsory insurance.

3a. It is not so much convalescent homes as industrial colonies that are needed after sanatorium treatment. The sanatorium is a sort of convalescent home itself. In one sanatorium in America the patient is only admitted on condition that he does such work as is ordered and undertakes to remain till he is considered fit to return to his own avocation. Permission to leave is only given when he can do a full day's work without rise of temperature.

4. It has always been the practice in a well-conducted sanatorium to impress upon the patients the importance of free ventilation night and day, of suitable feeding, of destruction of expectoration, and in a large proportion of the cases these instructions are to some extent carried out on their return home.

5. Sanatoriums serve two perfectly distinct purposes—the arrest of the disease in early cases and the prevention of its spread by advanced cases. This difference ought to be recognised. The isolation of advanced cases and, when this is impracticable, their removal from dwellings and surroundings in which they are foci for dissemination of the disease is necessary for the protection of the public, and is as much a matter of public health as the prevention of contamination of drinking water by enteric stools. It is a duty of health authorities everywhere and ought not to be left to charity.

6. A sanatorium provided by a county or other public authority, or by public contributions, ought to be of the simplest possible character. A private philanthropist may be allowed to choose what form his sanatorium takes on condition that he endows as well as erects it.

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ON THE OBJECTS AND LIMITATIONS OF SANATORIUMS FOR CONSUMPTIVES.

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THE invitation of the Editors of THE LANCET to discuss certain important questions with regard to sanatoriums about which there is a difference of opinion is a good one if such discussion evokes the matured experience of physicians, but I have written so much and so recently on sanatoriums that I hesitate to inflict on the readers of THE LANCET another communication,¹ however short.

The question has been asked if experience has demonstrated the therapeutic value of sanatorium treatment generally, and the answer of most of us is in the affirmative. No sensible physician ever expected that a few months' stay in a sanatorium would work such changes in the system of a consumptive as not only to arrest his disease but also to render him immune against all future attacks of the tubercle bacillus when he returned to the conditions under which the disease was engendered. Too great expectations were held out of the probable benefits of sanatoriums in this country by those who had had little or no practical experience of consumption and knew not what a serious and insidious disease it really is, and though a warning-note was uttered by myself and others against such wild expectations they were encouraged by the daily press and led to grievous disappointment.

Sanatoriums are intended for cases of consumption of recent origin and with limited lesions with little or no fever. Such patients under the system of a well-organised and well-equipped sanatorium in a good climate gain weight, colour, and probably muscular power, and show diminution, if not disappearance, of cough and expectoration and of tubercle bacilli. The physical signs are lessened and sometimes disappear, arrest of the disease takes place and these patients are said to be cured. But, alas, experience frequently proves this hope to be fallacious, as there is some danger of relapse even in the most promising cases if they return to unfavourable surroundings. Sanatoriums are not intended for advanced cases or even for patients where the lesions are moderate but show signs of extension and of breaking down and are accompanied by pyrexia. They are not places where severe cases ought to be segregated, for this is the function of consumption hospitals where severe cases of all kinds can be properly studied and treated with appropriate nursing, medicines, and food. Hospitals are as necessary in the treatment of consumption as sanatoriums and this is recognised in all countries which attempt intelligently to deal with tuberculosis as a whole. Such are Sweden and Denmark, for these, while distributing magnificent sanatoriums over the country on the best-chosen sites, also build well-equipped consumption hospitals near Copenhagen and Stockholm.

Where this division is not carried out, as I have witnessed on more than one occasion, the results are disastrous, for the sanatorium becomes choked with patients with advanced disease, for the most part bed-ridden and on their road to the grave, and what chance could promising cases have in

¹ THE LANCET, Jan. 30th, 1904.

such company? The Brompton Hospital has long recognised these objects, though circumstances prevented their realisation till lately. Now, in addition to the parent hospital, they have established an excellent sanatorium of 100 beds at Frimley for incipient tuberculous cases and by a most careful selection of patients, which the skilled diagnosis of their accomplished acting staff renders possible, the beds are filled with suitable cases. The results, as far as they go, are satisfactory and will in due time be published by the committee of management. The North London Hospital for Consumption has taken a similar course.

For the treatment of consumption three institutions are required: (1) a consumption hospital to deal with all acute and advanced cases; (2) a sanatorium for patients with incipient and limited lesions, for the most part able to take exercise; and (3) a settlement or colony of patients with arrested consumption where these can be employed on work adapted to their strength and capabilities. In the United States, especially in the Western States, a goodly number of the patients are to be found following outdoor occupations and proving themselves useful members of society. If the patients be retained at the sanatoriums, as they ought to be until the disease is arrested or, at any rate, quiescent, any further convalescent homes are unnecessary, for they should be transferred at once either to the proposed settlement or to their own homes to carry out there the hygienic life in the principles of which they have been trained.

With regard to the proposal of combining a system of insurance with the sanatorium movement, as has been done in Germany, I for one should welcome such a plan, but I doubt whether the British working man would support it less he is compelled to do so by the State, as is the case in Germany under Bismarck's famous law for compulsory insurance of workmen against industrial accidents and sickness.

The question whether successful results are obtained equally in the well-to-do and the working classes in sanatoriums I should answer in the negative. As far as my experience goes the consumptives of the upper classes have more recuperative power than those of the working and lower classes and this comes out in sanatorial as well as in other forms of treatment. When I used to compare my hospital and private patients I often noticed that in a number of cases of tuberculous consolidation at one or both apices excavation took place much more rapidly among the poorer or hospital patients than among the well-to-do, and the same was the case with regard to extension of disease. Nevertheless, the working classes do make great progress towards recovery under suitable conditions. Fresh air and good food do wonders for them and they gain flesh and strength; but the improvement in the physical signs appears to me slower than in the well-to-do. It remains to be seen what the system of graduated labour introduced at the Frimley Sanatorium will do for the patients of the poorer classes and my impression is that it will put them more on a par with the well-to-do who owe so much to graduated exercise.

The educational value of the sanatorium cannot be questioned and as the patients return to their homes it will become more and more widespread. The consumptive who has been an inmate of a well-organised sanatorium, having been trained to deal with his sputum and other secretions is no longer a source of danger to his neighbours and returns to his family the ardent apostle of fresh air and of wholesome living and the strong opponent of dirt, dust, uncleanness in any form, want of ventilation, and overcrowding. Such an apostle, though sometimes trying in a household where there are aged inmates or those suffering from rheumatism or bronchitis, does incalculable good in the dwellings of the poor and enforces his gospel by example as well as by precept. At the Brompton Hospital, which is

now completely under the open-air system, many consumptives sit by preference by the open windows instead of crowding, as formerly, round the fires.

With regard to the reply of the medical officer when consulted by the county authority or philanthropist "whether they are doing their best for the tuberculous in building a costly sanatorium," I, objecting strongly to the word *costly*, would recommend him to advise the building of a hospital or sanatorium of some kind in the interests both of the community and of the patient. Cases of acute or advanced consumption with expectoration abounding in tubercle bacilli are more or less infectious and are therefore a danger to those around them. These cases ought to be segregated in a hospital where they can be properly attended to and disinfection carried out. Cases with slight or quiescent lesions require more fresh air and better food than is usually to be obtained in the dwellings of the poor. The great objection to all hospitals and sanatoriums is their cost, which in the best German and English institutions has been considerable, and which for the most perfectly constructed and equipped will always remain high. But we might provide some of our Poor-law infirmaries with buildings of a cheaper and perhaps more temporary kind if only the British architect would devote his energies to this practical problem and tackle the many difficulties which surround it. We must, however, remember that after all the great aim of statesmen, philanthropists, public authorities, and medical men ought to be the *prevention* of tuberculosis rather than its *cure*, and this can only be attained by the removal of all the conditions which deteriorate the constitutional powers and predispose the individual to the bacillar attack.

When we have abolished the evils of overcrowding, of excessive hours of work in an unwholesome atmosphere, and of insufficient food, and have secured the wholesome homes and workshops for the poor, contemplated by Acts of Parliament and by County Council regulations, when we have checked drunkenness and vice and have made sure that our population are properly fed and clothed, we shall be approaching the looked-for result—the prevention of tuberculosis.

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THE THERAPEUTIC VALUE OF SANATORIUM TREATMENT IN PULMONARY TUBERCULOSIS.

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In a paper¹ read before the Royal Medical and Chirurgical Society on Nov. 14th, 1899, as an introduction to a discussion on the Open-air Treatment of Tuberculosis, I stated my conclusions² as follows:—

"It is hardly necessary to state that in not all the cases treated on this system does arrest of the disease follow. The test to be applied to any method is not, Will it cure every case? but, Is it the best with which we are acquainted? If a perfectly certain cure for tuberculosis were discovered to-morrow it would necessarily have limits to its application and a very large number of existing cases would certainly be beyond those limits. In this, as in all other affections, the sooner the patient is brought under treatment the greater is the chance of the disease undergoing arrest. It is, however, a mistake to suppose that it is a method only applicable at a very early period of the disease. The experience of the

¹ Transactions of the Royal Medical and Chirurgical Society, vol. lxxxiii., p. 1.

Loc. cit., p. 24.

last ten years at Nordrach is conclusive as to the good effects which may in some cases be expected, even when the area of the lungs affected is considerable and excavation has taken place. On one point, at least, I am fully convinced—viz., that if Brehmer's method can be successfully applied in this country, as I have every reason to believe will be the case, we should take Nordrach as our model in preference to any other existing sanatorium. Those whose experience extends so far back even as 20 or 25 years have seen many methods of treating this disease put forward, supported in some cases by names of authority, and in nearly all by statistics of gratifying success already obtained. They come, they have their day, and go and are forgotten. Is this method, call it by what name you will, but another which will share the same fate? I think not; I believe that it has come to stay. No one can tell what the future has in store in the field of therapeutics and it is by no means improbable that the next century may witness the discovery of some agent capable either of conferring immunity to the virus of tubercle or of arresting the extension of tuberculous lesions, but a system which aims at increasing by every means the resisting power of the body must, I believe, always find a place amongst the methods to be employed in combating tuberculosis of the lungs."

During the six years that have since elapsed I have had considerable further opportunities of observing the effects of sanatorium treatment and am glad to be able to state that the opinion I expressed in 1899 as to the great value of this method of treatment as carried out by Dr. Otto Walther at Nordrach has been in no degree altered; I am still convinced that it is "the best with which we are acquainted." I am glad to observe that you use in the communication which you have forwarded to me the term "sanatorium treatment"; it is one the adoption of which I advocated in my paper. As I there stated,¹ "the object of treatment is not merely to secure the arrest of the disease but those changes in the affected area which characterise obsolete lesions. It is important to remember that for such changes to take place a long period of time is required, to be measured in some cases by years, and that failing this it is very likely that the patient will suffer a relapse so soon as he submits to the strain which a busy life entails." Disappointment has resulted because this fact has not been recognised and relapses have been frequent. The treatment produces such an unwonted feeling of health that patients, no matter how carefully they have been advised, at times forget the necessity for such a prolonged period of care. The experience of Dr. Walther led him to formulate the rule that for two years subsequent to "arrest" the patient should avoid any violent exercise and my own experience has proved the wisdom of such advice. In nearly all the cases of relapse which I have observed the breakdown has been due, not to the work of life, but to over-exertion, either in sport or games. I regard this as the chief danger which confronts the well-to-do patient. Fortunately, in most cases a return for a few months to sanatorium life has sufficed to arrest again the activity of the disease.

THE NORDRACH SYSTEM.

The features which distinguish the Nordrach system are, very briefly:—1. An absolutely open-air life, day and night, in sunshine, fog, or rain. 2. No *liegehalte*. 3. An abundant diet, regulated by the judgment of the physician in charge, who must attend at all the meals. 4. Rest before meals. 5. Exercise regulated according to the bodily temperature and strength of the patient.

The form of exercise held by Brehmer to be most suitable for cases of pulmonary tuberculosis was slow up-hill walking. One of the reasons for the great success obtained at

Nordrach is that the site is admirably suited to this form of exercise. In the paper already referred to I stated (p. 17): "It is very desirable that correct views should prevail upon the place which exercise occupies as an integral part of this method. Many members of the profession and the public appear to have grasped two facts in connexion with it, but this is not one of them. Such may be again reminded that a patient may lie in the open air till 'all's blue,' including, as I have observed, his cheeks, and be stuffed with food till he is as fat as a Strassburg goose, and yet the disease in his lungs may not be arrested. Brehmer's method, when properly carried out, is a system of training which aims at developing in every possible way the bodily strength, and for this exercise is as necessary as fresh air and plenty of food." The longest walk taken by patients at Nordrach is about 24 miles in the day. In the course of the discussion one of the speakers stated that the Germans had been unable to find Nordrach. In my reply I ventured to express the opinion that "if they had found Nordrach and lost nearly all the other sanatoria it would have been the better for them." Information derived from a friend who has quite recently visited Berlin and some sanatoriums in Germany leads me to think that Nordrach has not yet been found—indeed, he was told by a high official that they "do not know anything of Nordrach."

Since 1899 several efficient and many inefficient sanatoriums have been established in this country and from personal experience I feel able to state that only those that have taken Nordrach as their model have proved to be worthy of the support of the profession.

THE BROMPTON HOSPITAL SANATORIUM.

I am well acquainted with, and had some share in establishing, the Brompton Hospital Sanatorium at Frimley, which was opened for the reception of patients in March, 1905, and I would invite any of your readers who are troubled with doubts as to the value of sanatorium treatment in tuberculosis of the lungs to pay a visit there. I should like to take this opportunity of expressing my high opinion of the admirable organisation and discipline which Dr. M. S. Paterson, the medical superintendent, has instituted, as it is entirely to his efforts that the success so far obtained has been due.

Each batch of patients on arrival from the parent hospital at Brompton—through which they must all pass—is addressed by the medical superintendent on (1) discipline, (2) fresh air, and (3) feeding. As they have already been trained at Brompton for the lesson they have to learn they find but little difficulty in falling in with the more complete open-air life followed at Frimley. It was, however, not an easy task to establish the tradition of absolute obedience to orders which now prevails; the conviction as to the wisdom of the regulations came to the patients as they found themselves steadily improving in health and strength. Now everyone cheerfully goes about his appointed exercise or work irrespective of the weather, and if told off to roll the lawn for two hours he does it and is not found after five minutes sitting upon the handle of the roller.

As an illustration of the thoroughness of the treatment so far as "open-air" is concerned, I may state that the desire of the majority of the patients whose bedrooms on the upper floor are without a balcony is to be promoted to a room with a balcony, or to one on the ground floor, so that they may be able to pull out their beds and sleep in the open air. I was told when at Frimley in December, 1905, that most of the patients at that time slept in the open air when it was not raining. During the recent frosty weather the patients were told that they could close their windows for an hour whilst they were dressing, but it was found that none of the windows were closed. Hats and caps are not worn except when walking outside the grounds.

¹ Loc. cit., p. 8.

The appetite developed by an open air life is surprising; as most of the staff voluntarily lead the same life they experience a similar increase of appetite.

Daily routine.—6.50 A.M.: Rise and turn down beds and proceed according to "Morning Routine." 8.15 A.M.: Breakfast for tables 1, 2, and 3. 8.30 A.M.: Breakfast for tables 4, 5, and 6. 9.30 to 9.55 A.M.: Indoor work. 10 A.M.: Outdoor work or exercise. 10.50 A.M.: Lunch. 11 A.M.: Outdoor work or exercise. 12 to 12.45 P.M.: Absolute rest for tables 1, 2, and 3. 12 to 1 P.M.: Absolute rest for tables 4, 5, and 6. 1 P.M.: Dinner for tables 1, 2, and 3. 1.15 P.M.: Dinner for tables 4, 5, and 6. 2 to 2.45 P.M.: Absolute rest for tables 1, 2, and 3. 2.15 to 2.45 P.M.: Absolute rest for tables 4, 5, and 6. 2.45 to 4.35 P.M.: Work or exercise in grounds. 5 P.M.: Tea for tables 1, 2, and 3. 5.15 P.M.: Tea for tables 4, 5, and 6. 5.50 P.M.: Temperatures taken for tables 1, 2, and 3. 6.5 P.M.: Temperatures taken for tables 4, 5, and 6. 6 to 7.45 P.M.: Read papers, write letters, play indoor games, &c. 7.45 P.M.: Supper for tables 1, 2, and 3. 8 P.M.: Supper for tables 4, 5, and 6. 8.40 P.M.: Prayers. 8.45 P.M.: Bed. 9.15 P.M.: Lights out. 9.30 P.M.: Silence.

A quarter of an hour is allowed for smoking after each meal. A quarter of an hour is allowed before each meal for washing. Patients are not allowed indoors except for meals and rest hours until 6 P.M. without special permission. Patients may use the concert hall and reading room from 6 P.M. until prayers.

Sunday routine.—The routine is the same, with the following differences: There is no work. 9.30 to 10.35 A.M.: Patients walk two miles in all weathers. 11 A.M.: Divine service. 12 noon: Rest hour. 2.30 P.M.: Those patients who have permission may walk outside the sanatorium until 4.45 P.M.

The patient's day is thus so completely occupied that he has little leisure for introspection and I am informed that the only common complaint is "We are kept so busy we have no time for anything."

Graduated labour.—The new feature which Dr. Paterson has introduced at Frimley is graduated labour, a feature which appears to me to go far to solve the question as to the applicability of sanatorium treatment to the poorer classes. County authorities and the public are naturally asking: "Are the patients whom you call 'cured' able to work and earn their own living?" (I deprecate the use of the word "cure" but the public will have it so.) Upon the answer which we are able to give to this question the provision of adequate sanatorium accommodation for the poor depends. I believe we can state that the patients classed as "arrested" after treatment at Frimley are fit for work.

The gradation of exercise and labour is as follows:—Exercise and labour are for two periods daily, each of two hours' duration. 1. Slow walking exercise, beginning at two miles a day and gradually increasing up to ten miles a day. 2. Picking up fir cones and firewood in the grounds and carrying a "half-basket" (weight 11 pounds) to the stack. 3. Carrying a full basket of firewood and cones (weight 16 pounds). 4. Carrying a "half-basket" of gravel or stones from the gravel pit to the place where paths are being made or repaired (weight 21 pounds). 5. Carrying a basket of gravel or stones, the weight of which is gradually increased up to 38 pounds. 6. Rolling the grass or gravel. 16 men pull a roller weighing 15 cwt. 7. Digging ground already broken. 8. Mowing grass with a lawn mower. 9. Digging unbroken ground. 10. The same as under 9 but for six hours daily instead of four hours—i.e., the hours usually spent at rest are spent in labour.

The indications accepted as evidence of the arrest of the disease are: (1) absence of fever; (2) absence of adventitious sounds, except such as are indicative of

fibrosis; (3) absence of cough and expectoration; (4) continuous gain of weight or maintenance of the patient's highest known weight; and (5) ability to perform labour incidental to grade No. 9 as above.

The point to which I wish especially to draw attention is that no patient is classified on discharge as "arrested" unless for three weeks continuously he can pass one or other of the following tests:—

Test A.—For patients who earn their living by manual labour: To be able on an ordinary diet and without rest hours to use a pick and shovel of the full size and weight for six hours daily and to maintain his health. The shovel and spades are in three sizes, weighing 2, 4, and 6 pounds respectively. The picks vary from 3 to 7 pounds in weight.

Test B.—For patients who do not earn their living by manual labour, e.g., clerks, shopmen, or salesmen: To be able on an ordinary diet to perform the labour of grade No. 6 or No. 7 for six hours daily for three weeks and to maintain his health. These patients are, as a rule, gradually brought up to No. 9 and when it is found that they can do this work they are put back to No. 6 or No. 7. The theory is that a man doing the work described under No. 9 or No. 10 who on discharge will engage in work involving but little bodily exercise would suffer in health from such an abrupt transition. Further experience is, however, necessary upon this point. In some cases it is found that patients are unfit for No. 9 but that they can be raised to a standard of labour which is equal to their ordinary work. These patients are tested before discharge on the grade to which they have attained but they are not, as a rule, classified as "arrested."

The system has been gradually evolved and has not yet been in operation for a sufficient time to justify the expression of a final opinion as to its value, but there appears to be every reason for anticipating that it will prove successful. A visit to the sanatorium will convince anyone of the healthy, not to say robust, appearance of the patients on graduated labour. I am told that the desire of every patient on walking exercise is to be allowed to work; that the man engaged in collecting wood envies the man who is carrying gravel; that a patient with a large pick-axe is regarded as a fortunate being by his neighbour with a small one; and that, in a word, there is a general desire to obtain promotion to a higher grade of labour. So marked is this feeling that experience has shown that constant supervision and surprise visits are necessary, not, as might have been anticipated, to ascertain that the patients are doing their work, but to see that they are not exceeding the amount of work they are fit for.

The sanatorium is fortunate in having a public gravel pit on a breezy site close by where any amount of work may be done, and it is found that if a patient at work in the grounds is not making progress he is very likely to do so if sent to dig in the gravel pit. It should not prove difficult to adapt this scheme of graduated labour to the local features of any sanatorium provided that a sufficient area of land is either purchased or rented, and I see no reason why it should not prove equally applicable to sanatoriums for private patients. If it were explained to such patients that manual labour was an essential feature of the treatment I believe that few would refuse to perform it.

Long before the existence of a sanatorium in this country I was in the habit of sending patients to work in horticultural gardens and the good results which followed convinced me of the value of light labour in the open air. I believe that the ideal to aim at is to surround every sanatorium with such a garden, as no open-air occupation presents such a variety of grades of labour as is to be found in a horticultural garden.

Results.—The results so far obtained at the Brompton

sanatorium are as follows: patients admitted, 190; discharged, 89; under treatment, 101.

Cases discharged.—Disease arrested, 23; disease probably arrested, 4; left at own wish, 30; discharged as unsuitable, 16; convalescent cases,⁴ 16; total, 89.

Patients send reports as to their health and occupation at intervals of three months after discharge. All the patients classed as "arrested" are known to be at work and earning their living, except such as have not sent the first report—i.e., a shorter period than three months has elapsed since their discharge. The 30 patients who left at their own wish did so for the following reasons: family reasons (e.g., wife out of work, wife in bad health, stoppage of club pay to wife), 19; "felt quite well and did not see the necessity for further treatment,"⁵ 8; fear of losing their work, 2; because a patient was found smoking out of hours and in the woods and was discharged and he had been smoking with discharged patient but was not discovered, 1; total, 30. 16 patients were discharged as not suitable: disease so extensive that it was impossible for patients to work without rise of temperature or because suffering from dyspnoea, 11; coming home drunk, 1; smoking in the woods, 1; mentally deficient, 2; suffering from asthma, 1; total 16.

CONCLUSIONS.

My answer, therefore, to your first question is: That "experience has demonstrated the therapeutic value of sanatorium treatment" provided it is carried out on the right lines. To your second question I reply that, with the same proviso, "the results obtained may be equally successful with well-to-do patients and with the working classes." As to the necessity for "an elaborate system of insurance for the working classes," it may be stated that at Frimley nearly all the male patients who have broken down whilst in employment and have been valuable to their employers are found to be in receipt of full pay for six months. This is very kindly action upon the part of the employers and their generosity is much to be commended. The limits of this paper prevent me from discussing the general question of the possibility or desirability of adopting the system of industrial assurance as carried out in Germany. If we are able to obtain results which carry conviction as to the value of this method of treatment as applied to the poor then my belief is that, given a reasonable prospect of a patient being restored to a state of health which will enable him to earn his living, the money necessary for the support for six months of any who may be dependent upon him will generally be forthcoming from some charitable source.

Provided the treatment in the sanatoriums for the poor follows the lines above described, and the patient before his discharge is able to stand the labour test which immediately precedes it, there should be no "necessity for convalescent homes to prolong the treatment." I believe, however, that if the co-operation of the managers of convalescent homes throughout the country can be obtained these institutions, if utilised in a manner to be presently described, may be of great service in dealing with this disease.

The best answer I can give to your other questions is to state briefly the lines of policy which should, in my opinion, be followed in dealing with pulmonary tuberculosis throughout the country.

GENERAL SCHEME.

1. Every general hospital and every special hospital for diseases of the chest should be in relation with a sanatorium.
2. Every general hospital and every special hospital for diseases of the chest should have a tuberculosis department.

⁴ A certain number of beds are reserved for "convalescents" who are not undergoing sanatorium treatment.

⁵ Letters to patients now in the sanatorium show that several of these cases have relapsed.

This might be, but would not necessarily be, a separate clinique, but would be a bureau of registration with an almoner attached.

3. A register should be kept of all patients suffering from pulmonary and other forms of tuberculosis and the patients should be classified under the following headings: (a) suitable for sanatorium treatment; (b) suitable for general or special hospital or for home treatment; and (c) suitable for Poor-law infirmary treatment.

4. The department should supply a leaflet giving instructions to patients as to the proper method of dealing with the sputum and also provide them without charge with a portable spittoon and the necessary disinfecting solution.

5. It would be the duty of the almoner to visit the homes of the patients in order to ascertain if other inmates were already infected and by kindly persuasion and advice to induce them to submit to treatment and to take the necessary measures for preventing the further spread of infection.

6. Pending the acceptance of compulsory notification of tuberculosis the general hospitals throughout the country and such other agencies as could be enlisted in the work should collect information as to the existence of centres of infection and thus help to check the spread of the disease.

7. No effort should be spared to secure the admission to sanatoriums of patients in the early stage of the disease, in which stage alone in dealing with the poor is it likely that economic results—i.e., complete arrest with ability to work—will be obtained.

8. The cases must be selected by competent medical men. If admission to the sanatoriums is governed by any system of nomination or of subscribers' letters my belief is that the suitable cases will not be obtained and the scheme will fail.

9. The general and special hospitals should be in relation with convalescent homes in which a certain number of beds should be set apart for patients, possibly, but not certainly, suffering from tuberculosis. Whilst in the home these patients should be treated on sanatorium lines and such as develop the disease should be transferred to a sanatorium as opportunity offers.

10. The newly established Convalescent Homes Association has here a great opportunity for proving its usefulness. If it can obtain this much-needed co-operation between the hospitals and the homes it will have fully justified the efforts of its founders and will have performed a most useful work.

Clarges street, W.

THE SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS.

By FRANK J. WETHERED, M.D. LOND., F.R.O.P. LOND.,

PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON; ASSISTANT PHYSICIAN TO THE MIDDLESEX HOSPITAL.

IN attempting to arrive at a definite opinion as to the value of the sanatorium treatment of pulmonary tuberculosis numerous difficulties are met with. The statistical evidence now to hand is in some respects contradictory but on the whole decidedly encouraging. The contradictions are, perhaps, more apparent than real and arise in devious ways. One fact that causes confusion is that the authorities in charge of some sanatoriums admit patients in all stages of the disease, whilst others only take cases in the early stages. Thus the results are much more favourable in the latter institutions than in the former. It must be noted also that many of the figures that have been published through various channels refer only to the results achieved when the patients leave the sanatorium, whereas it is evident that that is not the crucial point, the essence of the whole matter being how the patients progress during subsequent years. As an illustration of the false impressions that might arise owing to the want of uniformity in the

sease has passed beyond the stage when the chances of cure are highest. He dates his illness not from the commencement of the symptoms but from the time when he has to give up work. Even if the patient should come under medical observation when there is only slight infiltration in the lung and consents to undergo suitable treatment, if he or she be married, the thought of "home" and those dependent on their labour and care is constantly present and a natural source of worry and anxiety. Consequently, if no improvement be manifested after a few weeks, the man is troubled with the idea that his wife and family are suffering from his absence from work and the loss of the income derived therefrom, and he insists upon returning to work when the reparative processes have only just begun, with the almost certain consequence—a relapse. The woman acts in a similar manner and against all advice returns home to her children and deplorable results ensue. Not only does she herself rapidly become worse, but there is a possibility of her infecting others. These considerations naturally weigh less if the patient is unmarried and has no one dependent upon him or her. A longer stay in the sanatorium is then possible and a prospect of arrest of the disease more hopeful. But even if the first two conditions are fulfilled—an early diagnosis and six months' residence in the sanatorium can be carried out—all the benefits thereby attained may be ultimately set at naught by the patient returning to unhealthy surroundings and an unsuitable occupation. A man accustomed to outdoor life may be able to continue to pursue the course of life he has been taught whilst under active treatment. But what is a man who has been brought up as a clerk, a lithographer, a baker, or a tailor to do if he cannot return to his former means of earning a living? Such men know nothing of a country life and yet if they return to their former occupations relapse is most probable. Yet how, with the necessary change of work, can they hope to earn sufficient money to support themselves and those dependent upon them?

The majority of the patients who entered the sanatorium in the early stage of the disease and remained a sufficient length of time there will probably have been discharged as "greatly improved and fit for work." Other patients will have been sent out as "unfit for work" and advised to "take things as easily as possible." Inquiries into the future of these two classes yield peculiar results. According to statistics at the end of four years about an equal percentage are alive and able to do light work. The explanation is that those who were discharged "fit for work" returned to hard and unsuitable labour and surroundings and many of them speedily relapsed, whilst those "unfit for work" led quieter and more sheltered lives, capable, perhaps, of undertaking a little light work, and being carefully looked after by their friends or charitable institutions. They were thus able to drag on through an invalid life and did not suffer from severe recrudescence of active disease.

In the public mind "quiescence" is too frequently confounded with "cure" of the disease. Quiescence or temporary arrest may be brought about within six months under suitable treatment, but two or three years at least are required before "cure" can be pronounced. Here lies the difficulty in inducing patients to appreciate the consequences of "after-treatment" in the shape of suitable employment subsequently to leaving the sanatorium. Sanatoriums for the working classes, if they are to repay the money expended upon them, must be accompanied by farm colonies or other means to instruct the patients in suitable employments. Otherwise the ultimate results can only be disappointing.

This consideration leads to a third question. In the case of working classes, must an elaborate system of insurance

be combined with a system of sanatoriums and are convalescent homes necessary to prolong the treatment? To both these points I unhesitatingly answer "Yes." I consider that the proposed schemes for building such institutions will prove a failure unless insurance against disease is made compulsory. The idea that the institutions should be supported by the funds of trade unions, friendly societies, and kindred associations is excellent, but judging from the speeches made on the subject by those who are not medical men very wrong impressions have been created in their minds as regards the true significance of open-air treatment. The idea seems to have arisen that a person suffering from "consumption" has only to go to a sanatorium for a few weeks—"three months" is the term frequently used—in order to be "cured." Even in the case of highly educated individuals quiescence is mistaken for cure, and assemblies of working men receive with applause the announcement that the speaker has known fortunate individuals who have secured admission into a sanatorium for a few weeks to come out cured. Exaggerated notions are thus excited and the sanatorium treatment comes to be regarded as having an immediate and miraculous effect. Those who are intended to be responsible for the maintenance of these sanatoriums must be made to understand thoroughly the three principles I have already alluded to—early diagnosis, prolonged stay in the sanatorium, and subsequently suitable employment. In order to secure these essentials to the workers, I consider compulsory insurance to be absolutely necessary. A working man will far more willingly seek medical advice if he knows that if prolonged treatment is necessary his family will be supported during his absence. Consequently, instead of struggling on until he can work no longer, being afraid of losing a good situation, as soon as the early symptoms develop, such as cough and loss of weight, he would at once go to a medical practitioner in order to ascertain the nature of the malady. An early diagnosis would thus be much more frequent than in the present circumstances, and so the success of sanatorium treatment would be correspondingly increased. Further, the knowledge that his family would not be in want of the necessities of life would enable the patient to remain the necessary length of time in the sanatorium and so would diminish the risk of relapse. Aid should be forthcoming from the insurance funds to help to support the patient and his family until he could learn some outdoor employment. In such circumstances hopes of permanent cure would be considerably brighter than is possible under the present condition of affairs in this country. The oft-quoted German statistics, especially of the railway workers, demonstrate the advantages that can be gained by imposition of compulsory insurance.

If self-supporting sanatoriums are actually brought into existence one most important point must be insisted upon, and that is, that although the funds will be provided by trade unions and friendly societies, yet the management of details must be vested in the hands of medical men. As I have already several times pointed out, early diagnosis is all-important if success is to follow, and therefore the selection of cases must rest entirely with the medical officers and not with the officials of the supporting societies. For not only must the disease be in an early stage but indications of activity must be absent. The sanatorium will in a certain sense belong to the working men but that must not give them the right to nominate for themselves the patients who are to be admitted. If a worker is found to be suffering from pulmonary tuberculosis in an advanced stage there will naturally be a wish amongst his fellows, kindly disposed as they are, to "give that man a chance" by nominating him to a bed in the sanatorium and to try to insist on his admission. It may seem hard on the individual, and such a course may be deplored, but if the maximum benefit is to be

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manner in which results are stated I will take the very interesting statistics issued by Dr. Lawrason Brown, resident physician to the Adirondack Cottage Sanatorium, Saranac Lake, N.Y.¹ A summary of results in 1500 cases is given, the patients having been discharged from the institution from two to 18 years previously. In all, 497 (33 per cent.) patients were alive at the time the report was issued; 569 (38 per cent.) were dead and 434 (29 per cent.) could not be traced. Of the 497 patients who were alive 329 (22 per cent.) were "well"; 69 (4·6 per cent.) were "arrested"; 44 (3 per cent.) relapsed; and 55 (3·7 per cent.) were "chronic." Such results do not appear to be satisfactory as they only show 4·6 per cent. of arrested cases and 22 per cent. of patients who were well. Now if the 434 cases in which the patients could not be traced are eliminated the outcome, as Dr. Brown shows, is slightly better. In 1066 cases the patients could be traced; of these 31 per cent. were well; 6·6 per cent. were "arrested" cases; 4 per cent. had relapsed; 5·2 were chronic cases; and 53·3 per cent. had died. If, however, each class of case is considered separately, according to the stage of the disease, very different conclusions can be arrived at. Of the number of incipient cases that could be traced 66 per cent. were well and 21 per cent. were dead. Of the 563 advanced cases which were traced, 28·6 per cent. were well and 52 per cent. were dead; whilst of the 235 far advanced cases 2·5 per cent. were well and 90 per cent. were dead. It is evident, then, that in order that any opinion may be derived from figures all statistical reports must be based on a common plan, otherwise confusion must arise. Further, conclusions based only on a small number of cases are of only very little, if of any, value. Early cases of pul-

monary tuberculosis may heal spontaneously, as is shown by post-mortem experience at general hospitals. If early cases are placed under any sensible treatment a fair percentage will show temporary improvement and it would be very fallacious to base conclusions on a dozen or so cases treated by a new method. For any therapeutic measure to be thoroughly tested the results must be based on a large number of cases which have been observed over a course of years.

under treatment; (2) if the patient remained under active treatment for a sufficiently long period which, in most cases, I consider should be at least six months; and (3) if a healthy outdoor life could be subsequently followed. There may be a few exceptions to the last-named condition, but a return to an indoor and sedentary occupation is accompanied by serious risks of a relapse. I believe the sanatorium treatment of pulmonary tuberculosis to be the best that has hitherto been introduced, but at the same time it is by no means a specific, and only a certain proportion of the patients can hope for partial or complete recovery. Certain adjuvants may from time to time be introduced. In some sanatoriums Koch's old tuberculin is being used and satisfactory results are claimed. Further experience and lapse of time, however, are necessary before any definite pronouncement can be made as to this addition to ordinary sanatorium methods.

Another question asked is: "Are successful results obtained equally (a) in well-to-do patients and (b) in the working classes?" Up to the present I believe not, but I see no reasons why the results should not be equally favourable as I shall presently explain. Owing to circumstances more patients of the well-to-do classes are, under the present conditions of society in this country, able to abide by the three principles I have named above than is the case with those of the working classes. Further, the more independent the patient as regards the necessity of earning a living the better is likely to be the result.

I have to thank Dr. H. G. Felkin for supplying me with the statistics of 100 patients who have been under the care of himself and Dr. R. Mander Smyth at the Linford Sanatorium, Ringwood, New Forest. In the accompanying table the

TABLE OF RESULTS OF TREATMENT AT THE LINFORD SANATORIUM, RINGWOOD, NEW FOREST.

Site and stage of disease.	Ultimate result.																
	Immediate result.					Alive after one year.		Alive after two years.			Alive after three years.			Died under one year.	Died above one year.	Died above two years.	
	A*.	I.	S.	W.	D.	A.		S.	W.	A.			S.				W.
						A.	S.			A.	S.	W.					
One lobe, early disease ...	7	7	—	1	—	4	3	1	1	—	4	1	—	1	—	—	
" " advanced disease ...	—	1	1	—	1	—	1	—	1	—	—	—	—	—	—	—	
Two lobes, early " ...	3	14	—	3	1	3	2	3	3	—	—	3	1	1	—	1	
" " advanced " ...	—	7	—	1	2	—	3	—	1	1	1	—	—	—	1	1	
Three " early " ...	1	12	1	—	2	—	4	—	2	2	1	2	—	—	—	1	
" " advanced " ...	—	5	—	3	1	—	1	—	—	—	—	—	—	5	—	1	
Four " early " ...	—	9	—	2	—	1	1	—	1	—	—	—	—	5	1	1	
" " advanced " ...	—	7	—	3	1	—	2	—	—	—	—	—	1	4	1	1	
Five "	2	—	—	1	1	—	2	—	—	—	—	—	—	1	—	—	

*A = arrested. I = improved. S = *in statu quo*. W = worse. D = died.

Seven of the patients were lost sight of and one patient died from other causes than pulmonary tuberculosis.

monary tuberculosis may heal spontaneously, as is shown by post-mortem experience at general hospitals. If early cases are placed under any sensible treatment a fair percentage will show temporary improvement and it would be very fallacious to base conclusions on a dozen or so cases treated by a new method. For any therapeutic measure to be thoroughly tested the results must be based on a large number of cases which have been observed over a course of years.

Has experience, then, demonstrated the therapeutic value of the sanatorium treatment? From the mass of evidence that has now accumulated and from personal observation I am firmly of opinion that it has, provided that certain conditions have been fulfilled. In the absence of these the results have not been so good. The chief of these conditions are three in number: (1) if the disease was in the incipient stage and not acute when the patient first came

under treatment; (2) if the patient remained under active treatment for a sufficiently long period which, in most cases, I consider should be at least six months; and (3) if a healthy outdoor life could be subsequently followed. There may be a few exceptions to the last-named condition, but a return to an indoor and sedentary occupation is accompanied by serious risks of a relapse. I believe the sanatorium treatment of pulmonary tuberculosis to be the best that has hitherto been introduced, but at the same time it is by no means a specific, and only a certain proportion of the patients can hope for partial or complete recovery. Certain adjuvants may from time to time be introduced. In some sanatoriums Koch's old tuberculin is being used and satisfactory results are claimed. Further experience and lapse of time, however, are necessary before any definite pronouncement can be made as to this addition to ordinary sanatorium methods.

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I have to thank Dr. H. G. Felkin for supplying me with the statistics of 100 patients who have been under the care of himself and Dr. R. Mander Smyth at the Linford Sanatorium, Ringwood, New Forest. In the accompanying table the

¹ The Journal of the American Medical Association, Nov. 21st, 1903.

disease has passed beyond the stage when the chances of cure are highest. He dates his illness not from the commencement of the symptoms but from the time when he has to give up work. Even if the patient should come under medical observation when there is only slight infiltration in one lung and consents to undergo suitable treatment, if he or she be married, the thought of "home" and those dependent on their labour and care is constantly present and a natural source of worry and anxiety. Consequently, if improvement be manifested after a few weeks, the man is tormented with the idea that his wife and family are suffering from his absence from work and the loss of the income derived therefrom, and he insists upon returning to work when the reparative processes have only just begun, with the almost certain consequence—a relapse. The woman acts in a similar manner and against all advice returns home to her children and deplorable results ensue. Not only does she herself rapidly become worse, but there is possibility of her infecting others. These considerations naturally weigh less if the patient is unmarried and has no one dependent upon him or her. A longer stay in the sanatorium is then possible and a prospect of arrest of the disease more hopeful. But even if the first two conditions are fulfilled—an early diagnosis and six months' residence in the sanatorium can be carried out—all the benefits thereby attained may be ultimately set at naught by the patient returning to unhealthy surroundings and an unsuitable occupation. A man accustomed to outdoor life may be able to continue to pursue the course of life he has been taught whilst under active treatment. But what is a man who has been brought up as a clerk, a lithographer, a baker, or a tailor to do if he cannot return to his former means of earning a living? Such men know nothing of a country life and yet if they return to their former occupations relapse is most probable. Yet how, with the necessary change of work, can they hope to earn sufficient money to support themselves and those dependent upon them?

The majority of the patients who entered the sanatorium in the early stage of the disease and remained a sufficient length of time there will probably have been discharged as "greatly improved and fit for work." Other patients will have been sent out as "unfit for work" and advised to "take things as easily as possible." Inquiries into the future of these two classes yield peculiar results. According to statistics at the end of four years about an equal percentage are alive and able to do light work. The explanation is that those who were discharged "fit for work" returned to hard and unsuitable labour and surroundings and many of them speedily relapsed, whilst those "unfit for work" led quieter and more sheltered lives, capable, perhaps, of undertaking a little light work, and being carefully looked after by their friends or charitable institutions. They were thus able to drag on through an invalid life and did not suffer from severe recrudescence of active disease.

In the public mind "quiescence" is too frequently confounded with "cure" of the disease. Quiescence or temporary arrest may be brought about within six months under suitable treatment, but two or three years at least are required before "cure" can be pronounced. Here lies the difficulty in inducing patients to appreciate the consequences of "after-treatment" in the shape of suitable employment subsequently to leaving the sanatorium. Sanatoriums for the working classes, if they are to repay the money expended upon them, must be accompanied by farm colonies or other means to instruct the patients in suitable employment. Otherwise the ultimate results can only be disappointing.

This consideration leads to a third question. In the case of working classes, must an elaborate system of insurance

be combined with a system of sanatoriums and are convalescent homes necessary to prolong the treatment? To both these points I unhesitatingly answer "Yes." I consider that the proposed schemes for building such institutions will prove a failure unless insurance against disease is made compulsory. The idea that the institutions should be supported by the funds of trade unions, friendly societies, and kindred associations is excellent, but judging from the speeches made on the subject by those who are not medical men very wrong impressions have been created in their minds as regards the true significance of open-air treatment. The idea seems to have arisen that a person suffering from "consumption" has only to go to a sanatorium for a few weeks—"three months" is the term frequently used—in order to be "cured." Even in the case of highly educated individuals quiescence is mistaken for cure, and assemblies of working men receive with applause the announcement that the speaker has known fortunate individuals who have secured admission into a sanatorium for a few weeks to come out cured. Exaggerated notions are thus excited and the sanatorium treatment comes to be regarded as having an immediate and miraculous effect. Those who are intended to be responsible for the maintenance of these sanatoriums must be made to understand thoroughly the three principles I have already alluded to—early diagnosis, prolonged stay in the sanatorium, and subsequently suitable employment. In order to secure these essentials to the workers, I consider compulsory insurance to be absolutely necessary. A working man will far more willingly seek medical advice if he knows that if prolonged treatment is necessary his family will be supported during his absence. Consequently, instead of struggling on until he can work no longer, being afraid of losing a good situation, as soon as the early symptoms develop, such as cough and loss of weight, he would at once go to a medical practitioner in order to ascertain the nature of the malady. An early diagnosis would thus be much more frequent than in the present circumstances, and so the success of sanatorium treatment would be correspondingly increased. Further, the knowledge that his family would not be in want of the necessities of life would enable the patient to remain the necessary length of time in the sanatorium and so would diminish the risk of relapse. Aid should be forthcoming from the insurance funds to help to support the patient and his family until he could learn some outdoor employment. In such circumstances hopes of permanent cure would be considerably brighter than is possible under the present condition of affairs in this country. The oft-quoted German statistics, especially of the railway workers, demonstrate the advantages that can be gained by imposition of compulsory insurance.

If self-supporting sanatoriums are actually brought into existence one most important point must be insisted upon, and that is, that although the funds will be provided by trade unions and friendly societies, yet the management of details must be vested in the hands of medical men. As I have already several times pointed out, early diagnosis is all-important if success is to follow, and therefore the selection of cases must rest entirely with the medical officers and not with the officials of the supporting societies. For not only must the disease be in an early stage but indications of activity must be absent. The sanatorium will in a certain sense belong to the working men but that must not give them the right to nominate for themselves the patients who are to be admitted. If a worker is found to be suffering from pulmonary tuberculosis in an advanced stage there will naturally be a wish amongst his fellows, kindly disposed as they are, to "give that man a chance" by nominating him to a bed in the sanatorium and to try to insist on his admission. It may seem hard on the individual, and such a course may be deplored, but if the maximum benefit is to be

weeks "for the purpose of being educated" is not likely to lead to very good results. During a man's stay at a sanatorium there is a constant fight between the forces of the body, which are being strengthened, and the tubercle bacilli, which are being placed at a disadvantage. The principle of the survival of the fittest applies to micro-organisms and the last tubercle bacilli to succumb are probably the strongest. Consequently if a man leaves a sanatorium too soon it is possible that when he leaves there are a smaller number of bacilli in his lungs, but that these bacilli are more virulent as a whole than those present in his lungs when he entered the sanatorium. When such a man returns to the conditions under which he contracted the disease, he has to contend with the conditions which undermined his strength and possibly with a more virulent race of bacilli. In consequence it not infrequently happens that he dies sooner than if he had never gone to a sanatorium. Is it fair to attribute such a result to the defects of the sanatorium treatment?

Before expressing an opinion as to the value of sanatoriums it is necessary, in view of what I have just stated, to express a general opinion of what I mean by sanatorium treatment. The efficiency of a sanatorium depends entirely on the physician in charge of it. A sanatorium is one part hospital and three parts school. At such an institution, if properly conducted, a patient is taught to eat sufficient food and not to be afraid of fresh air. In other words, he is taught to return to a natural and healthy mode of life. The two factors, sufficient food and fresh air, constitute merely the elements of the great truth which anyone suffering from consumption has to learn if he wishes to remain permanently well when the disease has been arrested. This great truth is the necessity of avoiding everything known to undermine the strength of those forces of the body which deal with any invasion of micro-organisms. If a tuberculous individual in whom the disease has been arrested will not interfere with nature then nature, in the majority of instances, will overcome his disease. Fresh air and sufficient food are necessary if these bodily forces are to be in a position to overcome the invasion of tubercle bacilli but they are of comparatively little avail if the individual is allowed to become over-fatigued or is subjected to too severe a strain. What a patient learns at a sanatorium, and only at a sanatorium, is the fact that *fatigue* kills the majority of consumptives and causes the frequent relapses of the disease. The avoidance of fatigue is therefore of primary importance. This is recognised by all competent physicians but the principle has been carried too far by some. The Dettweiler school regard rest in bed or in liegehall for long periods as essential, and consequently many of the German sanatoriums are in reality convalescent homes to which a number of liegehallen are attached. Dr. Otto Walther of Nordrach and his school essay the more difficult task of following in Brehmer's steps and of proscribing gradually increasing exercise to their patients, as soon as their temperature shows that the disease is sufficiently inactive to permit it. This form of treatment is more difficult because the decision as to the amount of exercise to be taken demands great judgment. More than once I have been accused in the medical press—to my personal satisfaction—of holding a brief for Dr. Walther. I would repeat what I have said often before, that Dr. Walther's system of treatment is justified by its results and that patients who have had their bodily forces gradually and judiciously increased by means of exercise show, in my experience, more permanent benefit than those treated in liegehallen. This point requires emphasis because it is the key to the solution of the economic value of sanatorium treatment so far as the working classes are concerned.

Many a working man is discharged from a sanatorium with the disease quiescent and arrested but without having

had his capacity for manual work developed. On leaving the sanatorium he usually obtains employment of the kind which he has been accustomed to follow. He may still have fresh air and sufficient food and yet he relapses—why? Because his work tires him and undermines the natural forces of his body which deal with micro-organisms. He falls because he was not gradually educated back to work, according to his strength, before he left the sanatorium. Certain attempts to remedy this defect have been made but most of them have been half-hearted and not properly organised. In the German working men's sanatoriums the patients "play at being rich men" and so refuse to work whilst at the sanatoriums, as to do so would be contrary to their social democratic principles.

An organised attempt to send working men patients away from a sanatorium, not only with their disease arrested, but with an educated capacity for hard work, is being made at the Brompton Sanatorium at Frimley. This is due to the initiative of Dr. M. S. Paterson, who prescribes walking exercise for a period and then such manual labour as the condition of the patient may indicate. The patient is kept under strict supervision and gradually the amount of work is increased. The results so far have been impressive but no judgment can be passed on the success of Dr. Paterson's work until sufficient time has elapsed to show the permanency of the results. Personally, I did not think that the patients could have been educated so rapidly to full work without harm, but if the results hitherto obtained are maintained, the economic possibilities of sanatoriums for the working classes will be immensely increased.

What proof can be adduced of the therapeutic value of sanatoriums in the treatment of pulmonary tuberculosis? This question may be approached from several standpoints: (a) the opinion of physicians accustomed to deal with the disease; (b) the statistical results of sanatorium treatment; and (c) the more purely economic results.

Physicians who are accustomed to see large numbers of individuals suffering from consumption consider the sanatorium treatment superior to any other known method. This is sufficiently shown by the fact that after due trial of modified sanatorium treatment at both the Brompton and the Mount Vernon Hospitals for Consumption the physicians persuaded their respective committees of management to establish a sanatorium of 100 beds in connexion with each hospital.

The statistical results are not dealt with so easily. In the first place there are few available statistics of the results of treatment before the advent of sanatorium treatment which are drawn up in such a way as to show the economic value of the various forms of treatment adopted. Then, again, in England we have not at hand a sufficient number of trustworthy statistics of the results of sanatorium treatment. We are therefore obliged to draw on the results obtained in the sanatoriums erected for the German working classes. There are naturally fallacies in any comparison between results obtained in the treatment of consumption before and after the advent of the sanatorium treatment, but even when allowance is made for these I think that the subjoined tables clearly indicate that the results obtained to day show a decided improvement on the results obtained before 1870.

Dr. J. E. Pollock² published in 1885 the results of treatment in 3566 cases of phthisis in all stages which had been observed by himself. The average duration of life of all these cases from their first symptoms was 30.59 months. The results obtained to-day without sanatorium treatment are probably much the same as these. For example, Dr. F. C. Shrubbsall has kindly ascertained for me that the average

² Prognosis in Consumption, p. 77.

duration of life of patients who die in the Brompton Hospital is 25 months from the date of their first symptom. It is difficult to analyse Dr. Pollock's statistics for the purpose of comparing them with results obtained in German sanatoriums where a large proportion of the cases are in an early stage. It is best, therefore, to confine our attention to 194 cases observed by Dr. Pollock and labeled "chronic first stage," as these seem to have been the cases which gave the earliest manifestations. The following table shows the results obtained at the end of five years:—

Results of 194 Cases of "Chronic Phthisis in the First Stage" (1867).

	At end of			
	Second year.	Third year.	Fourth year.	Fifth year.
Dead	13 per cent.	42 per cent.	65 per cent.	83 per cent.
Alive but capacity for work not stated	37 ..	53 ..	54 ..	17 ..

Dr. O. J. B. Williams² stated that out of 7000 hospital cases of phthisis he could only reckon 24 instances of cure and 51 of partial cure with indefinite duration, or a total of 75; and out of 1000⁴ patients in the upper classes treated between 1840 and 1870 only 34 recovered completely, though 235 could be classed as well when regarded in relation to their general health. These results were in advance of anything previously published but no statement is made as to the time which had elapsed in the case of these 235 patients from the commencement of their disease—that is to say, of the length of time during which they had maintained their good condition, beyond the fact that they were "well" when last seen. At the best, then, 23.5 per cent. of Dr. Williams's cases amongst the upper classes were capable of "following their occupations without any recurrence of their former symptoms," whilst of Dr. Pollock's patients only 17 per cent. of early cases were alive at the end of five years.

In order to obtain the most recent and most authoritative information⁵ of the results of the German sanatoriums for the working classes, I recently paid a brief visit to Berlin where every facility was accorded me. The number of cases of pulmonary tuberculosis treated between 1897 and 1905 in the German sanatoriums for the working classes amounts to over 100,000, as may be seen in the following table:—

Number of Cases treated in German Sanatoriums for the Working Classes.⁶

	1894.	1893.	1892.	1891.	1900.	1899.	1898.	1897.
Men	16,957	14,957	12,187	10,812	8,442	6,032	3,805	2,593
Women	6,530	5,211	4,302	3,244	2,652	1,665	1,104	735

² Quoted in Dr. Wilson Fox's "Diseases of the Lungs and Pleura," in second edition, p. 333.

⁴ Pulmonary Consumption, by Dr. C. J. B. Williams and Dr. C. Theodore Williams, second edition, p. 327.

⁵ I take this opportunity of expressing my gratitude for the information placed at my disposal to Dr. Jur. Richard Freund, director of the Imperial Insurance Department in Berlin, Professor von Fannowicz, secretary of the Council of the International Association for the Prevention of Tuberculosis; Dr. Zacher, Imperial Privy Councillor, President of Senate in the Imperial Insurance Department; Herr Dieckhoff, Imperial Privy Councillor and President of Senate in the Imperial Insurance Department; and especially to Dr. A. Kerpeling.

⁶ Statistik der "Krankheiten" in Versicherungsstatistik und Invalidenversicherung für die Jahre 1900, 1901, 1902, 1903, 1904, 1905, pp. 6-7.

The results of the sanatorium treatment of these individuals to date may be tabulated thus:—

Results of each 100 Cases treated in the Sanatoriums.⁷

Discharged fit to work in 1900.	Remained capable of full work at end of—				
	1910.	1901.	1902.	1903.	1904.
Men, 72	65	48	40	35	30
Women, 72	67	52	46	40	33

Discharged fit to work in 1901.	Remained capable of full work at end of—			
	1901.	1902.	1903.	1904.
Men, 71	70	53	45	33
Women, 77	72	60	51	45

Discharged fit to work in 1902.	Remained capable of full work at end of—		
	1902.	1903.	1904.
Men, 77	72	57	45
Women, 80	76	62	54

The average duration of stay in the sanatoriums was 75 days and the average cost per patient was from £17 to £18.

Better results still have been obtained by the Prussian and Hessian State railway companies which have sent their employés to the German sanatoriums for the working classes.

Results obtained in Employés of Prussian and Hessian State Railways.

Year of treatment	1893	1899	1900	1901
Number of cases treated	217	354	429	532

Percentage of patients capable of full work in subsequent years	79% in 1899	83% in 1900	84% in 1901	84% in 1902
	63% in 1900	72% in 1901	72% in 1902	72% in 1903
	54% in 1901	61% in 1902	63% in 1903	63% in 1904
	45% in 1902	54% in 1903	57% in 1904	58% in 1905
	43% in 1903	49% in 1904	55% in 1905	

We see then that, viewed as a whole, every 100 cases treated in the German sanatoriums for the working classes provide at least 31 persons who are capable of work at the end of five years (not from their first symptom but after their discharge from the sanatorium) and that when the conditions are more favourable, as they are in the case of employés of the Prussian and Hessian State railways, out of each 100 cases treated, from 43 to 53 are capable of full work at the end of five years from the time they left the sanatorium. These results show that under present-day conditions treatment is more successful than it was before the advent of sanatorium treatment. At that time, as I have stated, 83 per cent. of Dr. Pollock's early cases were dead at the end of five years from their first symptoms, whilst the remaining 17 per cent. were probably more or less incapacitated.

A further argument in favour of sanatorium treatment is obtained from the duration of life of a German working man who does not go to a sanatorium, from the time that he begins to draw "incapacity pay." A German working man is entitled to draw pay from the insurance companies when he has been incapacitated by consumption for six months. It is found that of every 100 of such men between the ages of 25 and 29 years only 17 are alive at the end of one year from

⁷ Loc. cit., p. 41.

the time they commenced to draw pay and only four are alive at the end of four years.³

It is, of course, true that this advance in the value of treatment is in part due to the earlier detection of the disease by means of Koch's bacilli and other methods, but so far as statistics are of value they show that sanatorium treatment has done much to add to the economic value of consumptives.

The successful results of treatment in the German sanatoriums for the working classes depend very largely on the facts that year by year a more careful selection of cases is made and that a large proportion of patients admitted have the disease in its early phases. It is sometimes said that the German statistics are not reliable and that one great fallacy is the (asserted) fact that many of the cases stated to be cured have never suffered from tuberculosis. In answer to this I need only state that business men like the directors of the Prussian and Hessian State railways are so satisfied with the results obtained by sending their employés to the insurance sanatoriums that during the last year or two they have established two sanatoriums of their own. In these sanatoriums tuberculin is used to establish the diagnosis whenever there is any doubt and the results obtained to date are practically the same as those which I have given above.

So far from thinking that it is impossible for us to approach the German results in England, I am convinced that these results would be much enhanced and that the permanency of the results obtained would be increased if the methods of treatment adopted in the German sanatoriums were changed. Many of these sanatoriums, as I have already said, are simply convalescent homes with liegehallen attached. The majority of patients are kept in the liegehallen for five or six hours a day but when they are within the buildings of the sanatorium they do not have a very free supply of fresh air. The buildings, it is true, are perfect but all the rooms are supplied with double windows and during the greater part of the winter the double windows are kept shut and only the fanlights are slightly open. To show the views of the physicians in these sanatoriums I would mention that some of them in the winter shut their bedroom windows at night and admit air into their bedrooms through a door leading into a sitting room, the window of which is kept partially open. The reason given to me for this procedure is that the climate in the neighbourhood of Berlin is so bad. It is interesting in this connexion to remember that many writers in England have said that it is impossible for us to obtain the same results as are obtained in Germany because the climate in Germany has so many advantages over our own.

The German sanatoriums for workers have so far failed in another respect. The arrangements for educating patients, whilst they are undergoing treatment, to a capacity for work have not succeeded, partly because of the liegehalle system and partly because the German working man refuses to do work which may possibly be remunerative to the institution. So far as I can obtain the facts, it would further appear that up to the present time the so-called agricultural colonies in connexion with these sanatoriums have also proved a failure. Some of us, I think, may expect too much from agricultural colonies on a large scale. Patients when they leave a sanatorium are often advised to spend the rest of their lives under open-air conditions and to avoid office work and the like. We must not forget the important part played in relapse by strain or that in open-air occupations, such as in the manual labour of farm work, there is much more strain and therefore more fear of relapse than in office work. Many patients

cannot stand the fatigue involved in manual labour to which they have hitherto been unaccustomed and such patients, in the experience of men of much authority on the subject, do better and are more likely to remain permanently well if they return to office work, to which they are accustomed, under reasonable conditions of hygiene, than if they engage in pursuits which entail much muscular strain. Then, again, it has been found in Germany that many workmen previously trained to other businesses can never be trained to become remunerative employés in agricultural colonies.

When I am asked whether equally good or better results can be obtained in the well-to-do classes I would say that the answer depends almost entirely on the character and backbone of the individuals concerned. The treatment of consumption is mainly a question of commonsense and of pounds, shillings, and pence. A man of some means who has the disease detected in its early phases has better opportunities of being admitted at once to an efficient sanatorium than members of the working classes, and on leaving the sanatorium he has better opportunities of leading a suitable life under good conditions. Working men do not enjoy such good opportunities as the well-to-do but they are perhaps more likely to follow medical instructions to the letter, and consequently when their conditions are favourable they are a greater credit to the sanatorium method of treatment.

If we turn to the blunt question, Do the German insurance companies make or save money by the establishment and maintenance of sanatoriums? there is some difficulty in obtaining an answer which gives a true perspective of the financial results. The reason for this is that in Germany the whole question is approached from the statesman's point of view, with the ultimate object of eradicating tuberculosis. In England we approach the question from the philanthropist's point of view, with the immediate object of relieving the suffering of a certain proportion of the present generation. The German authorities recognise that they cannot restore many of those who are suffering from advanced tuberculosis, to a condition of lasting economic value, and they accordingly concentrate their energies on detecting the disease in its early stages, on arresting the disease whilst it is possible to restore the individual's capacity for work, and on preventing the spread of infection from those cases which are beyond permanent benefit. Such a system costs money and so far expenditure outbalances the ascertainable savings, but there can be no question that in 20 years the German nation will be able to prove conclusively the financial return of their present policy. Already there is an indication of the value of their methods. As is well known, every German workman with an income of less than 2000 marks a year is forced by law to insure against sickness. The workman pays two-thirds and his employer one-third of the necessary contribution. Any workman so insured is entitled to a certain rate of pay for a certain period of time if he is incapacitated from work by tuberculosis or other disease. For the first few years after the law was passed compelling insurance the amount of money paid out by the companies to those incapacitated by tuberculosis steadily increased. Sanatoriums for the insured have been established for eight years and during the last few years the amount of money paid out for incapacity for work due to tuberculosis of the lungs has begun to diminish so far as the companies connected with Berlin and its neighbourhood are concerned. The number of men per 1000 receiving money for incapacity to work through consumption has fallen progressively in the last three years from 281 to 216, and in women from 163 to 119 per 1000.*

Such results are most suggestive of eventual monetary

* L'Etat de la Lutte contre la Tuberculose en Allemagne. Memoir presented to the Paris Tuberculosis Congress, 1905, by the Central Committee for the Erection of Sanatoriums for Consumptives in Germany, pp. 34, 35.

* Verwaltungsbericht der Landes-Versicherungsanstalt Berlin für da Rechnungsjahr 15

The following summary of registered provident societies and certified and Post Office savings banks in Great Britain and Ireland on Dec. 31st, 1903, may be of interest as showing the wealth of the industrial classes, exclusive of their contributions to many insurance companies, such as the Prudential Company. It is taken from the Report of the Chief Registrar of Friendly Societies, 1904. It must be remembered that there are many claims on this capital, and that it belongs to the thrifty working man and not to the poor or to the "unemployable."

	No. of returns.	No. of members.	Funds.
Building societies—			£
Incorporated societies	2,062	547,049	51,250,058
Unincorporated societies	62	54,155	14,947,169
	2,124	601,204	66,197,227
Friendly societies, &c.—			
Ordinary friendly societies	6,924	3,059,107	15,877,330
Societies having branches	20,845	2,613,552	22,549,147
Collecting friendly societies	43	6,973,136	7,220,932
Benevolent societies	73	24,964	329,551
Working men's clubs	870	224,832	320,638
Specially authorised societies	124	77,333	586,660
Specially authorised loan societies	506	101,816	711,739
Medical societies	96	325,057	61,000
Cattle insurance societies	56	3,667	7,840
Shop clubs	6	10,618	1,181
	29,543	13,414,182	47,666,118
Coöperative societies—			
Industries and trades	2,036	2,091,978	43,404,269
Businesses	245	62,531	816,214
Land societies	129	17,133	1,149,403
	2,460	2,171,642	45,369,891
Trade unions	672	1,575,375	5,250,186
Workmen's compensation schemes	54	117,619	181,432
Friends of Labour Loan Societies	255	33,590	258,303
Total registered provident societies	35,108	17,913,612	164,933,157
	Banks.	Depositors.	Deposits.
Railway savings banks	17	56,027	5,024,146
Trustee savings banks (including investments in stock and special investment accounts)	223	1,687,661	59,352,927
Post Office Savings Bank (including investments in stock)	14,362	9,403,852	162,300,695
Total certified and Post Office savings banks	14,607	11,147,540	226,677,768
Grand total	49,715	29,061,152	391,610,925

Note.—Where returns are made to a date other than Dec. 31st the particulars at the nearest date available are given.

The Poor-law institutions spend, yearly, large sums on consumption (for example, one-third of the deaths from consumption in London take place in Poor-law infirmaries). Again large sums of money are spent on consumption by convalescent homes, consumption and other hospitals and dispensaries, and by many charitable bodies, such as the Charity Organisation Society, ladies' visiting societies, and institutions for the dying. In my experience, too, employers are often willing to give financial and

other assistance to their workmen for the purpose of sanatorium treatment if such workmen have proved loyal and useful. There are, in addition, said to be some 600 sanatorium beds available in England. We might have, but at present do not have, assistance from such bodies as the Metropolitan Asylums Board.

In a condensed article of this kind it is impossible to deal adequately with the part that might be played in a general organised scheme by all these bodies and agencies to which I have alluded, but I think that hospitals, especially hospitals for consumption, might model their procedure on the line of what is done in Berlin so far as the detection of the disease in its early stages is concerned. I would say a word or two on the possibilities of the workmen's societies. In Germany the workmen forced the Government to deal with the question, for the insurance system was elaborated in direct reply to the criticisms of the Social Democratic party. In England the industrial classes are awakening to the necessity of action and they have realised that if action is to be taken the workmen must help themselves. Therefore I regard the National Association for the Establishment of Sanatoria for Workmen Suffering from Consumption, which is presided over by H.R.H. Princess Christian, as having initiated one of the most important movements of our time. I believe that this association, which owes its origin largely to Mr. W. G. Bunn, secretary of the Hospital Saturday Fund, has the remedy in its own hands if it can but attract the moderate support of philanthropists and if it associates itself in some organised way with other existing institutions and societies.

To take one example. Mr. Burnes, the secretary of the Hearts of Oak Benefit Society, has made an examination into the sickness experience for the past ten years of those members who died in 1904. Mr. Burnes found that each member who died from consumption before 40 years of age cost the society £17 17s. more than a member who died from some other disease before 40 years of age. In 1904 deaths from all causes were 2110; of these 377 died from consumption at average age, 40 years. Of the total (2110) 673 died under 40 years of age, of whom 33 per cent. died from consumption. On the basis of the German statistics it is probable that those who were restored to work by sanatorium treatment would in time provide, by means of their quarterly payments, not only enough money to balance the expenditure on themselves but a proportion of the expenditure on those whose capacity for work was not restored.

Let us take another example—that of the Post Office employés. In the years 1896-99 the loss per 1000 living in the general population of Great Britain and Ireland¹² was 1·3, whilst the loss per 1000 living in the Postal Service was 1·97, and yet Mr. Garland has shown that sufficient funds, for the efficient treatment (in sanatoriums) of postal employés who contract consumption, can be obtained if the employés will submit to a deduction of pay to the extent of less than $\frac{1}{2}$ d. a week, or of some 2s. a year. Over 30,000 employés have consented to such a deduction and the late Postmaster-General (Lord Stanley) arranged that the deduction should be made at headquarters and that anyone sent to a sanatorium should be entitled to six months' leave on full pay. There should be little difficulty in persuading the directors and employés of large industrial concerns, such as the railways companies, to follow the excellent example set them by the Post Office organisation.

These two instances are sufficient to show that the financial difficulties in England are not so formidable as might be thought. I think that the time has arrived for a Government inquiry into all the aspects of the subject. The question can be solved if there is coöperation between existing institutions and societies and if the working

¹² The Post Office and the Prevention of Tuberculosis, Mr. Charles Garland, THE LANCET, Sept. 14th, 1901, p. 723.

population will contribute a small weekly sum for the purpose.

I would therefore express my opinion, in answer to the request of the Editor of THE LANCET, that sanatoriums are essential to the treatment of tuberculosis and that, if properly used as an important part of a co-ordinated system, they are invaluable to a campaign directed towards the eradication of tuberculosis. If I am asked how a county authority or a private philanthropist can best spend money on those afflicted with consumption, I would answer that money would be best spent on co-ordinating our present forces and that no money should be spent on the erection of sanatoriums unless these institutions are to form part of a complete scheme such as I have briefly sketched.

What we lack at the present time is any scheme of co-operation between philanthropists and the societies of the working classes. We have no organised plan to deal comprehensively with the whole question with the ultimate object of eradicating the disease. If we are to have success we cannot continue without some central authority for tuberculosis. Our system to be of service must be perfected; cases must be detected in their early stages and dealt with; money or work must be provided for families when the breadwinner is away, and steps must be taken to prevent the spread of infection from advanced cases.

Brooklyn, N.Y.

SANATORIUMS FOR CONSUMPTIVES.

By F. R. WALTERS, M.D. LOND., M.R.C.P. LOND.,

PHYSICIAN TO THE CROOKSBURY SANATORIUM, LATE PHYSICIAN TO THE MOUNT VERNON HOSPITAL FOR DISEASES OF THE CHEST.

OWING to the absence of a descriptive name for the treatment adopted in open air sanatoriums some confusion is often noticeable in discussions on the subject. Few medical men will be found to advocate a return to the warm room and shut-window methods of a generation ago, few will venture to dispute the value of any essential detail of sanatorium treatment. There is general agreement, in theory at least, as to how a consumptive should be treated; but there is not yet the same unanimity as to where the treatment should be carried out, whether in an institution or in the patient's own home. Those who are best acquainted with sanatorium methods are the first to recognise the difficulties of open air treatment at home. The average home, whether middle class or artisan, is by no means ideal for the purpose, and it is usually expensive and sometimes impossible to make it suitable, to provide proper cross-ventilation and approximate freedom from dust and atmospheric impurities indoors, and convenient shelters and walks out of doors. Sanatorium treatment involves a reversal of ingrained habits usually shared by other members of the household, so that a change of surroundings for a time is distinctly advantageous, just as with a Weir Mitchell case or a habitual inebriate. Hygienic treatment depends for its efficiency on the personal attention of the medical adviser. Supervision in the home is necessarily imperfect and for a number of patients well nigh impossible. Take, for instance, the early visit of the day, when directions are given for the morning. Assuming that there are 50 patients to be seen in as many houses, and that these are five minutes' walk from one another, it will take well over four hours to give the patients the briefest possible personal directions, whereas these should be given at latest by breakfast time. In a good sanatorium it is usual for the medical officer to see each patient several times daily, to watch the effect of his walks on pulse, respiration, and temperature, to take the chief meals with him, and generally to keep in touch with him throughout the day, and although some of these duties might be delegated to a competent and specially instructed

nurse, it would still be physically impossible for one medical officer to supervise a number of patients in their own homes.

Just as with hospitals for the poor, so with sanatoriums, there is an advantage in treating many patients together, as laboratories and apparatus required for one patient are equally available for a number, and greater uniformity as well as greater precision of treatment can be insured at less expense. This advantage is likely to increase rather than to diminish with the more general adoption of special tests and methods of treatment, such as the opsonic test and the treatment by tuberculin or by specially prepared sera.

When we turn for confirmation of these advantages to the results of treatment we are met with many statistical difficulties. There are no complete statistics of treatment in patients' homes, and in this country only recent ones of sanatorium treatment. The average duration of treatment, the proportion of early and advanced cases, the completeness of hygienic supervision, and other details are most variable, so that a comparison under similar conditions is not yet possible. In the official report for 1905 of the German Central Committee for the Frection of Sanatoria for Consumptives, the results of seven years are given, including in all 3420 cases which had been fully investigated. It appears that from 79 to 86 per cent of those treated were still fully fit for work at the end of the first year, from 63 to 76 per cent at the end of the second year, from 54 to 67 per cent at the end of the third year, from 45 to 58 per cent at the end of the fourth year, from 44 to 54 per cent at the end of the fifth year, from 40 to 45 per cent at the end of the sixth year, and 37 per cent at the end of the seventh year.¹ These are the results of a course of treatment of less than three months on an average, which is insufficient to cure even an early case as a rule, after which the patients have mostly returned to the same conditions of life as those in which they were attacked. Taking these facts into account, the results are as good as can be expected, and much better in all probability than those of treatment at home. For really successful results early and prolonged treatment is needful, as well as suitable after conditions; whereas it is notorious that in this country most patients, whether middle class or artisan, usually present themselves when the disease is already extensive and the general health undermined, stay much too short a time, and then return to more or less unsatisfactory conditions of life. No wonder if there are many incomplete recoveries and many relapses. But how would this be remedied by substituting inferior hygienic conditions and increasing the difficulties of medical supervision? The proper remedy is to attack the causes of failure to increase facilities for early diagnosis and treatment to prolong the fresh air stage, and to provide better after-care.

Judging by personal impressions and comparing ten years of out-patient work at a chest hospital with two or three years as physician to in-patients, there appears to me an overwhelming superiority in the latter department. Indeed, I have been sometimes tempted to regard out-patient treatment of consumptives as sheer waste of time. Turning to a different class, I have a fairly large and increasing list of gentlefolk who have undergone sanatorium treatment during the last five years and remain well and at work, whereas I scarcely remember a single instance of recovery in this country under treatment at home. I have met with several cases in which open-air treatment was attempted at home or in apartments previously to admission to the sanatorium, and have been struck with the difference in results. Such patients freely confess after a few weeks' sanatorium treatment that they had unintentionally wasted their time at home, that home treatment was quite a different

¹ In each case the higher figures represent the latter results, which have been better year by year.

thing owing to the difficulties imposed by their surroundings, and that less progress was made in months at home than in weeks at the sanatorium. I have also had most flattering letters from medical men testifying to the educational value of sanatorium treatment; and this is not the least of the advantages conferred. I think, however, that these educational advantages should be extended to other members of the patient's household, and instead of excluding visitors absolutely, as is done at some sanatoriums, they should be encouraged to stay now and then at the sanatorium. This proceeding undoubtedly somewhat increases the difficulties of the medical director, but is likely to greatly reduce the opposition which the patient has to contend with on returning home.

Admitting, then, that institutional treatment is more satisfactory than home treatment during the active stage of the disease, what kind of institution should be adopted? Our chest hospitals and infirmaries have played a large part in reducing the mortality from consumption, but they are insufficient to give an adequate course of treatment to every patient who is suitable for admission, and they labour under the drawback of being mostly urban and provided with too little ground to permit of progressive walking exercise. If, then, we have to increase the accommodation it would best be done by opening sanatoriums in suitable country districts for pulmonary cases and others at the seaside for surgical tuberculosis. Some of our present convalescent homes are doubtless suitable for the purpose; but their beds are already overtaxed by a different class of applicants, and they would have to be reorganised to make them suitable for pulmonary convalescents. Such convalescents are still liable to feverish attacks and relapses in which they would require nursing. They have to be warned against occupations and amusements which are harmless to non-pulmonary cases, they require more daily medical supervision, and if they still have a cough with expectoration suitable rules have to be enforced. The mixture of pulmonary and non-pulmonary convalescents would be a mistake and each home should receive exclusively one or other kind. It is also better as a rule to separate the more serious cases from the slighter ones, as the former are depressing to the more convalescent and require more absolute rest and quiet and more constant nursing. In a large institution the separation could be effected by means of a separate block or building or group of chalets, but wherever possible the seriously ill should go to a different institution. The admixture of consumptives from different social classes is also not likely to work well in England. It is extremely doubtful whether as great a mixture as occurs in the Swiss cantonal sanatoriums would be tolerated in England. In the same way pauper cases would have to be separated as a rule from non-pauper working-class cases.

In the erection of sanatoriums for the poor it is not advisable to build massive structures of many storeys. Simple inexpensive buildings of one or two storeys, like the one at Holt, in Norfolk, or like some of our chalet sanatoriums, are more suitable and also better, because more like the cottages in which the patient should live when recovery is complete.

What objections are there to the erection of a sanatorium in any particular district? These are mostly sentimental and founded on ignorance. The erection of large sanatoriums in small villages abroad has led to a diminution in the mortality from consumption amongst the villagers, and there is absolutely no evidence that a properly managed sanatorium is a danger to the neighbourhood. People who talk of a sanatorium as being tenanted by a miserable herd of invalids are obviously innocent of any personal knowledge of the subject, as the patients at a sanatorium are proverbially cheerful and healthy looking. Any sanatorium which is an exception to this rule should raise grave doubts as to its

proper management. It is, of course, a trial to be banished from home for months, but if visitors were more freely admitted this would be much less felt.

There is, however, another side to the prolonged course of treatment. It is justly argued that prolonged idleness is apt to foster lazy habits and to make the patient less capable of steady work. The remedy for this is to substitute other forms of useful occupation as soon as the patients are fit for it. Hard manual labour is unsuitable for something like two years after the breakdown, but many forms of light work are permissible as a rule, such as hoeing, raking, sweeping, pruning, poultry feeding, chopping up thin pieces of food, and some of the work in which hand machinery is used. The spare time should, however, be chiefly employed in education. At Dr. Weicker's sanatorium for artisans in Silesia and in some others the patients have regular courses of instruction in shorthand, foreign languages, cooking, and the like. Many of the applications of science and art to manufacture would also be permissible, such as designing, photography, the reproduction of designs, some methods of decorating pottery, and some of the applications of microscopy and chemistry. A conference of medical men with technical instructors in various branches of handicraft would probably bring to light many useful occupations open to convalescent consumptives. The chief point to bear in mind would be the substitution of delicate for laborious work, brains for brawn. That hygienic teaching bearing upon the disease itself would be given is taken for granted; but the addition of suitable technical teaching would make the sanatorium a valuable educational centre, would add to the happiness and usefulness of the inmates, and greatly diminish the difficulty in finding work for discharged patients.

The remaining objections to sanatoriums are really at bottom financial. Such institutions are of necessity expensive to erect and to maintain; there is also the maintenance of the family to be provided for and the support of both patient and family until remunerative work is obtained. It should be quite possible to erect a simple but satisfactory working-class sanatorium for £100 per bed, perhaps even less. Now that our wealthy classes are beginning to interest themselves in such matters there will probably be less difficulty in starting fresh sanatoriums if only the nation is convinced of their usefulness. The cost of maintenance will vary from 2s. to 5s. per head per day, according to size and management. Further expenses will be incurred for technical instruction, but this is really in the long run remunerative expenditure. It would be a mistake to cut down the staff, as this inevitably causes inefficiency. Even though some of the lighter duties are undertaken by the convalescent patients, as in so many of the German sanatoriums, the consumptive will never repay the cost of his keep by what he does while under treatment. The chief object in giving him duties to perform will be educational, not pecuniary. These expenses will have to be met for about six months on an average in early cases, from eight to 12 months in more advanced cases, unless there is a model village in connexion with the sanatorium to which patients can be drafted. At the Adirondack Cottage Sanatorium in America each patient is usually expected to spend the greater part of a twelve-month under treatment; and the durability of the results is likely to be within limits proportional to the duration of treatment.

A supplementary society will be needed to look after the family; and if it were possible to transplant the latter to a model village a great step would be gained, as the patient could then join his family in suitable quarters when convalescent. Although celibacy is useful and in some stages indispensable, this could not indefinitely be enforced in the case of married patients, and the advantages of better

quarters and medical supervision of the family would outweigh the disadvantages of a non-celibate life. Submission to medical rules would be made a condition of admission to the model village. Gross breach of rules would entail dismissal. Many occupations unsuitable in towns would be quite harmless if transplanted to the model village. Possibly the co-operation of some of our large manufacturers could be secured for such a scheme. There would be less difficulty in starting purely rural occupations, such as the production of fruit and vegetables and poultry keeping. This is done in connexion with the Montefiore Home in New York, whose country branch supplies most of the fruit, vegetables, milk, and butter required by the urban hospital. A similar arrangement is contemplated at the Gateforth Hall Sanatorium, near Leeds. Much the same object is kept in view in the agricultural colonies which receive the convalescent lads from the Villiers-sur-Marne Hospital in France.

Apart from the model village, which is the logical outcome of sanatorium treatment, but which would take time and careful organisation to establish, it may fairly be argued that the actual cost of treatment in the sanatorium would be no heavier than the prolonged treatment in an infirmary which usually precedes death from consumption in our working classes. Dr. A. Newsholme has shown that the average duration of such treatment has lately been 221 days in the Brighton Infirmary. He makes out a strong case to prove that such segregation in the most infectious stage of the disease is an important cause for the immense reduction in the mortality from pulmonary tuberculosis in England and that where dispensary or home treatment is substituted there has been no such reduction. But if prevention is better than cure and the patient can be restored to working capacity for several years, and in many cases permanently, by sanatorium treatment, surely this will be at least as good an investment for the nation's money. Even supposing that on an average one half break down after five years and become a burden on the rates, we may fairly set against this the fact that if treated at home they would have infected fresh cases, and that for five years they have been maintaining themselves and their families. There is already reason to believe that the results of treatment are gradually improving, and with the more general use of special methods of treatment a much larger proportion of permanent recoveries will probably be obtained in future.

How the expenses of sanatorium treatment will best be met, whether by voluntary effort or by national or local subventions or all combined, must be decided by public opinion in the light of actual experience. Doubtless a large scheme of insurance against sickness, as in Germany, would be of the utmost value; but much has already been done in England by local effort and a number of county sanatoriums are already in working order, supported partly by voluntary subscriptions, partly by grants from various local authorities, and partly by payments from those under treatment. The Durham County Sanatorium, which was one of the first to be established, owes its existence to co-operation between local medical men and others with the working classes, for whom it is designed. Its funds are derived partly from payments of 3d. per quarter from the latter, partly from weekly payments by inmates who do not subscribe regularly, supplemented by subscriptions from the wealthier classes, and by subventions from district councils, boards of guardians, &c., at the rate of £75 per bed per annum. Regular subscribers have precedence for themselves and their families to the extent of their subscriptions. The latest outcome of this method is to be found in the Workers' Sanatorium about to be established in Kent.

Another class of sanatoriums is represented by the Liverpool parochial sanatorium at Heswall, which receives exclusively patients who have resided for a time in one of the Liverpool workhouses. This institution has been somewhat severely criticised owing to the small proportion of recoveries

obtained; but such criticism is, in my opinion, unreasonable. The proportion of advanced and incurable cases is necessarily large; the patients are derived from those whose physique is very poor even apart from their disease; and if a convalescent leaves the building he almost necessarily returns to the least suitable kind of home. Such institutions have a claim to support for the lives they save, not so much amongst the patients as amongst the general population. They receive the patients from the poorest kind of homes which would quickly become centres for the spread of consumption. Even if none of their inmates ever recovered they would be worthy of support.

In conclusion, I would plead for a comprehensive scheme of treatment. If the thing is worth doing at all it is worth doing thoroughly and from the moment a consumptive is received in a chest hospital or sanatorium he should be provided for or assisted according to his needs, until he obtains remunerative employment under fit conditions or until he dies. When his disease is quiescent he should be drafted from the chest hospital to the country sanatorium and thence to the model village if his original home is distinctly unsuitable. If, on the other hand, the progress is unsatisfactory, he should be either kept in a special portion of the chest hospital or transferred to a special home in the suburbs or in some accessible country place. Transfers could take place between this home and the sanatorium according to need, so as to diminish the staff necessary for the latter and bring the patient nearer to his friends. Combined with these institutions should be societies for giving help to patients' families and advising them in matters of hygiene and to find work under suitable conditions for discharged patients; also to supply instructors in technical and other subjects of the right kind for those under treatment. All sanatoriums should be subject to inspection by a central body such as the one administering the King's Hospital Fund, which would make grants to the deserving institutions as in the case of the hospitals. There is no reason why every branch of such a comprehensive scheme should not be started simultaneously, even if only on a small scale to begin with, for each could help the other. The sanatorium, as Knopf has pointed out, is of incalculable benefit to the whole community for the social lessons it inculcates in hygiene and orderly living, in sobriety, cleanliness, and self-restraint. "It cures the consumptive whenever his case is curable and demonstrates the curability of the disease independently of climate. It makes the patient a hygienic factor when he returns to his former environment and demonstrates the preventability of tuberculous diseases. It not only diminishes tuberculosis amongst the masses but makes their lot a happier one, furthering charity, humanity, and liberty."² And if the happy day should ever dawn when tuberculosis is extinguished the sanatoriums will be available as homes for the aged and infirm who crowd our almshouses and poorhouses and as convalescent homes for the overworked and underfed of our cities and towns.

Farnham, Surrey.

² S. A. Knopf, *New York Medical Journal*, Oct. 21st, 1905.

BRISTOL ROYAL HOSPITAL FOR CHILDREN.—At the annual meeting of the "ladies' auxiliary" in connexion with this institution it was reported that £479 had been collected for the hospital, whilst the "ladies' guild" had contributed a large quantity of bed-linen and garments for the patients.

HOSPITAL SATURDAY FUND AT EXETER.—The committee of this fund has distributed the £350 which were the result of this year's collections as follows: Royal Devon and Exeter Hospital, £165; West of England Eye Infirmary, £72; and Exeter Dispensary, £21; the remaining sum being allocated to the smaller medical charities and convalescent home. During the past 24 years £15,950 have been raised by this fund, of which £14,500 have been given to the different medical institutions.

A MEDLEY OF SURGERY.

By PROFESSOR E. E. GOLDMANN.

[Professor Goldmann, Extra Professor of Surgery in the University of Freiburg, in Baden, being recently on a visit to London, delivered at a meeting of medical men in the house of a friend a clinical address dealing with various interesting surgical points arising out of original and most ingenious observation. The lecture, which was fully illustrated by lantern slides, was listened to with great interest by those present and there was general regret expressed that Professor Goldmann had not made arrangements by which his remarks could have been heard at one of the learned societies. Professor Goldmann, through Mr C. A. Ballance, has kindly placed his manuscript and illustrations at our disposal.—ED. L.]

as a valuable accessory in diagnosis to surgeons as well as rhinologists. An exact image of the frontal sinus is obtained by the x rays: the patient, lying on his stomach, is so placed on the photographic plate that the x rays pass through the skull in its antero-posterior diameter. By means of the cylindrical diaphragm designed by Albers Schonberg of Hamburg the best results are obtained. According to the age of the patient and according to the thickness of the skull a soft or semi soft tube is used, the time of exposure varying from one and a half to two and a half minutes. The following plates illustrate how accurately the x rays enable us to determine the exact form, size, and extent of the frontal sinus in its bitemporal diameter. We can easily recognise its frontal, temporal, and orbital recesses and can even discern those frontal cells situated below the frontal process of the upper jaw bone which are so frequently affected in disease of the frontal sinus. By a slight modification in the position of the patient the antrum Highmorei and the naso lacrymal duct appear on the plate. The x rays not only prove the existence of a frontal sinus but also show its symmetrical or asymmetrical development,

FIG 1.



Healthy frontal sinus with probe in right half

FIG 2.



Suppuration in left frontal sinus characterised by deep shadow, right half healthy

FRONTAL SINUS.

Killian's operation for the radical cure of frontal sinusitis has created a demand for a more accurate method of determining the anatomical and pathological conditions of the frontal sinus. Intranasal examination by probe or by means of illumination may reveal important points as to the particular form of disease in the sinus yet fail to illustrate certain facts essential to the operator. The following method which I have applied in numerous cases during the last two years has proved most serviceable and has been welcomed

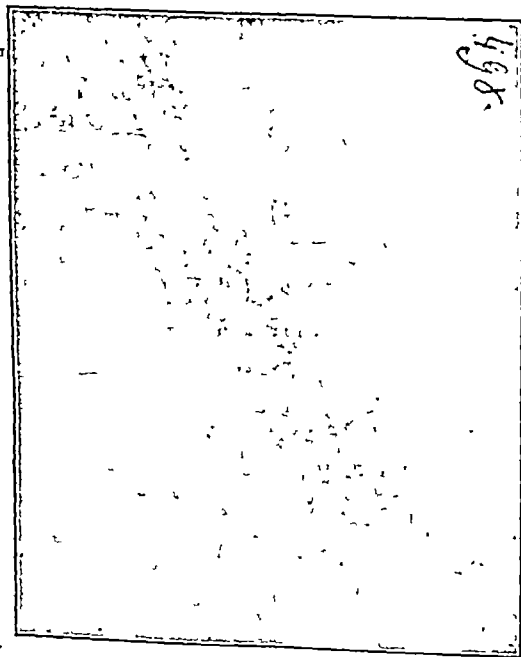
its complete or incomplete division by a median septum or abnormal osseous lamina. In short, it supplies the surgeon with a mass of detail of importance to him before he enters upon the operation. By passing a probe into the frontal sinus and then exposing the skull in its bitemporal diameter good results bearing upon the depth of the frontal sinus may also be obtained. I have no hesitation in declaring that this method may likewise be of great help in diagnosing pathological conditions of the frontal sinus. In several cases suppurative conditions of the frontal sinus associated

with thickening of the mucous membrane and the periosteum were diagnosed, a deep opaque shadow marking the disease half of the sinus. The operation subsequently corroborated our diagnosis. Although the x rays cannot take the place of the older and more complicated methods of intranasal examination yet improvements in their application and greater experience in reading the plates will undoubtedly tend to enhance the value of the new method (Figs. 1 and 2).

RADIOGRAPHY OF THE TRACHEA AND INTRATHORACIC GROWTHS.

Surgical operations on the neck and its viscera have multiplied considerably within the last two years. Most pathological conditions connected with intumescence of the diseased organ produce changes in the trachea affecting either its anatomical position or its interior. The laryngoscope fails in many instances to give full account of such changes as may at any time necessitate immediate surgical relief. Great progress towards more exact diagnosis of these changes was achieved by tracheoscopy, but tracheoscopy can only flourish in the hands of the experienced specialist. Even Killian and Wild have been obliged to confess that in children and old men their method has often proved impracticable. Bruns and his pupil Pfeiffer have recently published a method which is being used by all surgeons like myself working in districts where tumours of the neck, above all goitrous tumours, are frequent and give rise to great difficulties in diagnosis. The new method, which consists in taking an x ray photograph of the trachea, is applicable in all cases, causes the patient no discomfort, and supplies the surgeon with a bank of diagnostic evidence which he requires. What we photograph is not the trachea itself but the air which it contains. The x rays being absorbed in a varied measure by the walls of the trachea, its surroundings, and above all things by the cervical vertebrae, the radiographed trachea stands out in marked contrast and in many cases is discernible as far as the bifurcation. The photographic plate is placed under the patient's throat; the diaphragm, of medium width, is so focussed that the converging x rays meet in the median line

FIG. 3.

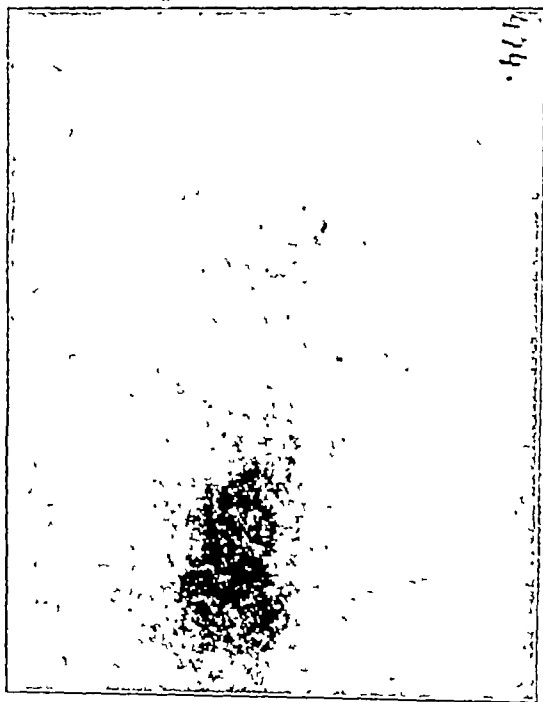


Stricture of trachea due to compression by goitre from both sides. Dilatation, opposite α , above strictured section.

at a point corresponding to the sixth and seventh cervical or the second dorsal vertebrae in cases of intrathoracic growth. Soft tubes are used; the time of exposure is from two to three and a half minutes in adults and from one and a half to two minutes in children. This method shows the exact

position of the trachea, the changes in its form and position produced by the tumours pressing upon it, and the form and locality of the tracheal stricture. In all my cases the result obtained by the x rays has been corroborated both by operation and previous tracheoscopy. It should be remarked that the photograph determines the trachea in its entire length, whereas by tracheoscopy only sections of the trachea are seen, great experience therefore being needed to form an adequate conception of the trachea as a whole. As very delicate contrasts of shadow may prove of supreme diagnostic value it is essential to examine the negative and not to rely upon proofs. The following plates (Figs. 3 and 4) may

FIG. 4.



Radiograph of trachea and intrathoracic growth; trachea (white line starting at α) pushed to the left by goitre.

demonstrate how valuable this new method of examination is for determining the relations existent between intrathoracic growth and the trachea.

OPERATION FOR CARDIO-SPASM (ACUTE DILATATION OF THE OESOPHAGUS).

Cardio-spasm is a name recently applied by Mikulicz to a form of disease known to pathologists for many years as idiopathic dilatation of the oesophagus. It was styled "idiopathic" because no immediate mechanical or pathological cause for its formation could be found—even after careful post-mortem examination. Oddly enough, where cancer is associated with cardio-spasm the growth is found above the dilated portion of the oesophagus. The seat of the trouble is usually confined to the lower two-thirds of the gullet. It varies in dimensions. In advanced cases the sac may hold one litre of fluid. The diaphragm divides the dilated portion of the oesophagus into a thoracic and an abdominal section. As a rule, the mucous membrane of the oesophagus is in a condition of chronic inflammation and at times shows multiple ulcers on its surface. In accordance with the size of the sac the condition of the muscular coat varies, showing hypertrophy in one case and atrophy in another. Since the disease has become the subject of more careful clinical study and since our methods of its diagnosis have been more perfectly developed great attention has been paid to its etiology. A review of the literature on the subject tends to prove that various causes may produce it. It seems beyond doubt that oesophagitis combined with a primary disturbance in the mechanism of the cardiac functions is at the root of the trouble. Physiological

for their distribution and spread. The portal capillaries in the liver, the glomeruli in the kidneys, for instance, may serve as a barrier which excludes tumour cells from the general circulation. As Weigert has put it: "In malignant growths one system of capillaries shields the other, serving

FIG. 9.



Sarcoma cells invading wall of a small bronchus.

as a kind of filter to the rest of the body." Any channel passing through the area of cancer may become the means of spreading the growth. I have given special attention to the finer ramifications of the bronchi, mammary ducts, bile-ducts, and hair follicles. (Fig. 9.) In all these

FIG. 10.



Cancer cells invading a mammary duct.

organs lymphatics pass through their various muscular and fibro-elastic coats and end immediately below the epithelial lining. These lymphatics are the media through which the tumour cells pass in invading the duct walls. We

therefore find the cancerous deposits penetrating up to the epithelial lining. The membrana propria and the epithelial lining form a line of defence for the aperture of the duct for a long time. In many cases the cancer cells never enter the duct, but when they do nothing stops their growth and spread along the whole length of the duct system. (Fig. 10.) In connexion with such cases I must mention two most interesting and important facts. The epithelial lining of the ducts may remain unchanged under the cancerous thrombus, thus proving that the so-called cancerous infection of epithelial cells does not exist. Then, again, when the duct is blocked by the cancerous growth the tumour cells very soon degenerate. The cause of this degeneration is the absence of blood-vessels, since an organisation of the duct thrombus, such as occurs in the cancerous thrombus of blood-vessels, does not take place. Necrosis of cancerous thrombi in blood-vessels and lymphatics is the exception and in ducts the rule.

I must confine myself to these bare outlines of my histological research. I must refrain from entering into a discussion of the important question why sarcoma and carcinoma, although histologically so alike in their relation to blood-vessels, yet differ so markedly in their mode of generalisation. These and many other questions in connexion with the biology of malignant growths are engaging my attention at present and I hope that on some future occasion I may have the honour of communicating and demonstrating the results of my work in this respect to you again.

(To be concluded.)

A CASE OF OCHRONOSIS.

By FRANK M. POPE, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE LEICESTER INFIRMARY.

With a Note on the Relationship of Alkaptonuria to Ochronosis,
by A. E. GARROD, M.D. OXON., F.R.C.P. LOND.

(With Coloured Plate.)

A SHORT résumé of our knowledge of this rare condition and of its apparent association with alkaptonuria in some cases from the pen of Professor W. Osler appeared in THE LANCET of Jan. 2nd, 1904. A conversation with the author of that paper at the Leicester meeting of the British Medical Association in July last led to the identification of the nature of the case here reported.

The patient, a woman, aged 47 years, was admitted to the wards of the Leicester Infirmary in 1895, under the care of the late Dr. Charles Cooper. That gentleman was suffering from bad health at the time and gave me permission to make any investigations into the case I thought fit. The patient was suffering from a large ulcer on the right leg and discolouration of the skin. The ulcer had existed for 12 years and had been continuously dressed during that time with a strong carbolic lotion. The discolouration had existed for five years. No history of any similar complaint in her family could be obtained. The face was coloured a dark brown. Inside the lips were patches of blackish discolouration. The ears presented a bluish appearance. The hands also showed a bluish discolouration. (See Figs. I. and IV.) There was a small bluish-black pigmented patch on each conjunctiva (see Fig. II.) about midway between the inner canthus and iris, when the iris was central. There were signs of a cavity at the apex of the right lung and the patient was much emaciated. Her mother had suffered from pulmonary tuberculosis. The urine was almost black in colour; it gave a dark brown precipitate with liquor ferri perchloridi and a slight white precipitate with bromine water. No sugar or copper-reducing substance was present. The urine was not of the same colour every day. Gangrene of the toes came on and the patient died in a few days from exhaustion, there having been no material change in the symptoms.

Post mortem, the right lung had a dry cavity at the apex. The suprarenal bodies were hard and dark in colour. The rib cartilages were stained bluish-black; the colour was more marked in the central area than at the periphery. The cartilages of the ears were bluish-black. The intervertebral cartilages were not examined. The patches of pigment in the eyes were seen to be due to a deposit of pigment in the superficial layers of the sclerotic. The note made at the

TO ILLUSTRATE DR. FRANK POPE'S PAPER "A CASE OF OCHRONOSIS."



FIG. I.

A side view of the left hand showing the pigment beneath thumb nail.



FIG. II.

Right eye showing patch of pigment in the sclerotic.



FIG. III.

General view of the head much reduced from a Water-Colour Sketch.
Note the blue shade of the cartilage of the ear.

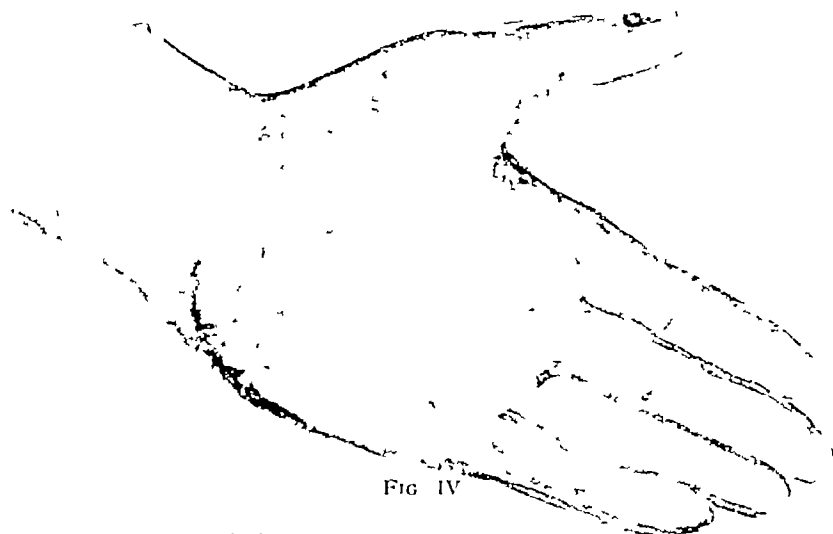


FIG IV
Palmar Surface of the left hand.

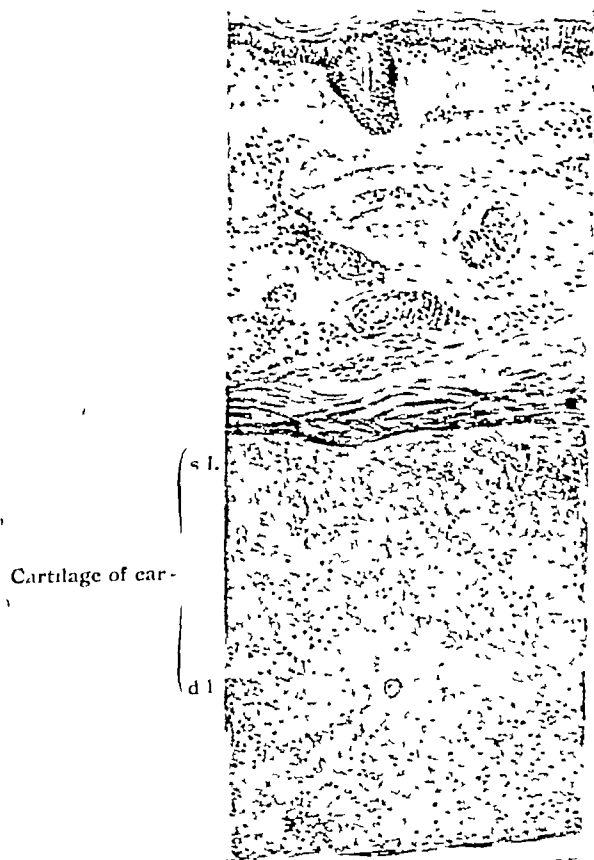


FIG V
Section of the skin and cartilage
(s l superficial layer and d l deep
layer) of the ear

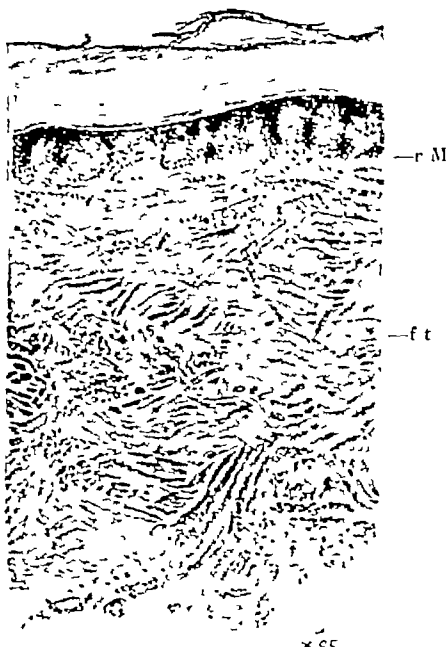


FIG VI
Section of the skin of the
finger r m rete Malpighii,
f t fibrous tissue

time was that microscopically the colour of the cartilages was due to "ordinary fine granular pigment."

Diagnosis from necropsy.—Tuberculosis of lung and disease of adrenal glands (Addison's). The colour of the urine was considered to be due to carboluria.

Coloured drawings were made during life of the superficial appearances, and microscopical preparations of the skin and cartilages were made and also of the suprarenal glands. The following is a description of their present appearances by Mr. E. H. Shaw of St Bartholomew's Hospital.—

Section of ear.—The skin is normal, no pigment being seen. The cartilage is pigmented throughout its substance, the colour being darkest externally, especially in the perichondrium (Fig. V.).

Section of skin of finger.—The epithelium shows the ordinary structure and arrangement of a skin surface. There is no pigmentation of the cells of the Malpighian layer. In the true skin there are some irregular masses of fibrous tissue in the form of broad bands. These bands cross and interlace with one another and they are of a

dark-brown colour in the central part. The bands are pure fibrous tissue; no striation or nuclei are visible. The pigment is confined to these bands, it is not granular, and is evenly distributed through their substance (Fig. VI.)

Description of coloured plate.—The appearance of the patient is well shown in the illustration. The face (Fig. III.) is very dark and bears a striking resemblance to a marked case of Addison's disease. Fig. I. shows the pigmentation of the deep layers of the skin in the finger and beneath the thumb nail, and Fig. IV. that of the palmar surface of the same hand. The patch of pigment in the sclerotic is shown in Fig. II. The pigmented cartilage of the ear can be seen in Fig. III, shining through the integument. Its appearance, I believe, not exaggerated in the slightest degree. The microscopical appearance of the cartilages of the ear is shown in Fig. V. This section has been rather deeply stained with bromatoxylin and consequently the most deeply pigmented layer of cartilage (Fig. V., *s1*) appears rather lighter than the less deeply (Fig. V., *s2*), the exact opposite of its appearance in the unstained specimen. Particular attention should be paid

TABLE GIVING PARTICULARS OF ELEVEN CASES OF OCHRONOSIS.

Case	Author and reference	Sex and age	Colour of skin.	Other parts coloured	Urine colour and reactions.	Other diseases.	Length of illness.	Illustrations in report.	Microscopical details
1	Virchow: Virchow's Archiv 1866, Band xxxvii., p. 212.	M., 67	No description presumably unaltered.	All cartilages	Clear, no account of reaction	Aneurysm, ascites, hydrothorax, and arthritis deformans	?	Coloured pictures of blackened cartilages (macroscopical).	Brown colouration of ground substance, granular pigmentation of cartilage cells.
2	Boström: Virchow's Festschrift, Band II, 1891, p. 177	F., 44.	No reference.	Cartilages ebony black; also spots on valves and endocardium of heart (brownish grey)	No reference.	Strangulated umbilical hernia	?	None.	Pigment generally distributed in ground substance of cartilages, granular in cells.
3	Hansemann: Berliner Klinische Wochenschrift, 1892, Band xxix., p. 660.	M., 41	No alteration.	Cartilages of ribs, sternoclavicular, intervertebral, etc., inkly black.	Black; no reduction of copper, no homogentisic acid. Not alkaptonuria (Langstein)	General oedema and aneurysm of the left ventricle.	18 years.	None.	Langstein, Hofmeister & Beltrage, Band iv., p. 155, on Urine, also Zdzarek, ibid., p. 373.
4	Helle: Virchow's Archiv, 1900, Band cix., p. 148	F., 36.	No alteration.	Cartilages of ribs jet black, cartilages of larynx and trachea only coloured in periphery.	No notes.	Peritonitis and ruptured tubal pregnancy.	"	Microscopical appearances of cartilages and lymphatic glands.	Fine granular pigment in ground substance.
5	Ibid.	F., 62	No alteration	All cartilages.	No change	Chronic ulcer of leg and mitral valve disease.	Many years	As above.	Same as above
6	Hecker and Wolf: Festschrift des 50 Jahr Best. d. Stadt Krankenhaus zu Dresden, 1899, p. 325.	M., 73.	A dun ash colour, brownish in places.	Patch on sclerotics, all cartilages, dura mater in spots.	Brown, becoming black on standing, no sugar or albumin. Not alkaptonuria	General arteriosclerosis, softening of cerebellum, myocarditis, stenosis and inefficiency of aortic valves, arthritis deformans, and osteomalacia.	Melanuria 11 years.	None	General pigmentation of ground substance of cartilage, granular also in patches, granular in dura mater.
7	Albrecht: Zeitschrift für Heilkunde, 1902, Band xxiii., p. 365.	M., 47	During life pale (black) Post mortem, no marked pigmentation.	Rib cartilages, chordæ tendineæ of the heart	Dark, reduces copper, all reactions of alkaptonuria except homogentisic acid. Alkaptonuria	Pulmonary tubercle	"	None.	Zdzarek, ibid., p. 373, on Urine. Microscopical
8	Osler: THE LANCET, Jan. 2nd 1904, p. 10.	M., 57 Living	Coal black on the nose and cheeks, patches on sclerotics, ears blue black.	Spots on the back of the hands.	Clear when passed, becoming black on standing. Alkaptonuria	Anæmia, weak, irregular heart, and Heberden's nodules.	More than 10 years	None.	Still living
9	Ibid.	M., 49 Brother of Case 8.	Normal, patches on sclerotics.	Ears showed blue-black through the skin, no post mortem.	Alkaptonuria	Died from pneumonia	—	None.	None
10	Ogden: Zeitschrift für Physiologische Chemie, 1893.	Living	—	Pearly grey inside concha.	Alkaptonuria	"	?	"	?
11	Pope: Present case	F., 47	Face brown, patches on sclerotics	Rib cartilages blue-black, ears blue. In side of lips black patches.	Black. Not alkaptonuria or true melanuria	Chronic ulcer of leg, phthisis and sclerosis of adrenals	Five years	Superficial and microscopical appearances.	Fine granular pigment in cartilages pigment in the white elastic tissue in the skin but not in rete Malpighii.

to Fig. VI. as this is the only section of the darkly stained skin that has yet been made. If anyone will take the trouble to compare it with a section or drawing of one from a case of Addison's disease, the difference in the site of the deposited pigment will at once appear. In the present section it entirely appears in the fibrous bands (Fig. VI., *f.f.*) and to me, and possibly to others, brings to light for the first time the extent of this layer, acting as a differential stain for this tissue, while in Addison's disease it appears, as does the normal pigment in the coloured races of mankind, as a very thin deposit in the deepest layer of the rete Malpighii (*r.M.*).

This case is the eleventh reported of this disease and the first from the British Islands. I present in tabular form short abstracts of all the former cases. It will be seen that all these cases had black colouration of cartilages. Five cases had black urine and two of these were alkaptonuric. In two other cases of alkaptonuria where there are records of post-mortem appearances, reported by Fürbringer¹ and Moraczewski,² no blackening of the cartilages is mentioned. In none of the cases except the present one is there any record of abnormal appearances in the adrenals. Four cases had patches of pigment on the sclerotics. Three only had marked discolouration of the skin.

I think it clear that the condition, for it hardly amounts to a disease, is one that is associated with the degenerative period of life, for though by the mere tale of years some of the patients had hardly passed middle age they had almost without exception suffered from wasting disorders or diseases which had profoundly affected the general body metabolism. Some of the observers consider that the pigment is only deposited in tissue altered by disease. The present case does not bear this out and it has been, moreover, opposed by Heile.

It seems probable that the fibrous tissues, cartilage included, are, under conditions not at present clearly understood, able to act as a filter and to retain a certain pigment which is circulating in the blood, of the origin of which we are also ignorant. It is not likely that many cases where deep skin pigmentation or melanuria was present have escaped notice and record. In those, however, where the pigmentation is confined to the cartilage and the urine is clear such oversight is more likely to occur. It is to be hoped that any future case will be most carefully examined during life, it being most important thoroughly to determine the condition and reactions of the urine and blood. Professor Osler has suggested that as two of his cases occurred in brothers this may turn out to be a family disease. The family history, therefore, of all cases of both ochronosis and alkaptonuria should be inquired into. The fact that the present case was not entirely under my own care must be the apology for what I feel to be a somewhat imperfect record. I cannot conclude without expressing my thanks to Professor Osler for drawing my attention to the real nature of the case and to Dr. Garrod for valuable advice and bibliography. The latter has kindly written the following note which adds much to the value of the present paper.

Note on the relationship of alkaptonuria to ochronosis by Dr. GARROD—The question of the relationship of the very rare conditions ochronosis and alkaptonuria is a very interesting one. The existence of such a relationship was first suggested by Albrecht. The urine of his patient (Case 7), who had the blackening of cartilages which constitutes ochronosis, was brown when passed, darkened on standing, and reduced Fehling's solution with the aid of heat and ammoniacal solution of silver nitrate in the cold, just as an alkaptonuric urine does. However, Zdarek failed to extract from it homogentisic or uroleucic acid to the presence of which the phenomena of alkaptonuria are due. Osler has since described a pigmentation of the ears, conjunctivæ, and skin, such as was observed in Albrecht's case, in three middle-aged men (Cases 8, 9, and 10), who have long been known to be alkaptonuric; and although no opportunity has presented itself of examining their cartilages there is every reason which external indications can afford for believing that the cartilages, and at least those of the ears, are deeply pigmented and that they may rank as examples of ochronosis. On the other hand, in such accounts of necropsies on alkaptonurics as are available there is no mention of blackening of cartilages, and although alkaptonuria is a life-long condition

young subjects exhibit no surface pigmentation. In the cases of ochronosis recorded by Hansemann and by Hacker and Wolf (Cases 3 and 6) dark urine had been passed for many years. Langstein has shown that the urine of Hansemann's patient gave none of the reactions of alkaptonuria and in the case of Hacker and Wolf, as in the present case, the urine had no reducing properties, a fact which practically excludes alkaptonuria. It is most desirable that in future cases of ochronosis the fresh urine should be examined from this point of view. At present the evidence seems to show that among the few recorded cases of ochronosis in which black urine, or urine which blackened on standing, was passed, some at least were not examples of alkaptonuria. On the other hand, there are very strong grounds for believing that in later life alkaptonuric subjects tend to develop the characteristic pigmentation of cartilages; in other words, that alkaptonuria is a cause, but not the only cause, of ochronosis.

A CASE OF OPERATION ON THE VESTIBULE FOR THE RELIEF OF VERTIGO;

TOGETHER WITH A DESCRIPTION OF THE FLAP EMPLOYED IN ORDER TO OBTAIN A BETTER VIEW OF THE PARTS DURING OPERATION; WITH REMARKS ON THE HISTORY OF THE OPERATION.

BY RICHARD LAKE, F.R.O.S. ENG.,
SURGEON TO THE ROYAL EAR HOSPITAL.

THE patient, a woman, 29 years of age, had been for some time absolutely deaf on both sides. Both ears had been operated on several times for the cure of suppurative otitis, the right more frequently than the left, with an eventually successful result on the right side, but the left was still liable to relapses. She had been under my care for long periods during the past nine or ten years, although none of the operations alluded to had been performed by me. During the past four years she had suffered so severely with bilateral aural vertigo that in walking she described, as it were, a series of curves alternately to the right and left, but with a greater tendency towards the left. She was extremely anxious for relief, and it may be noted that it was this case which three or four years ago first suggested to me the possibility of relief by operation, though, being as she is the breadwinner of the family, with a father frequently out of work, she was unable to come into the hospital until the early part of last year. The question which needed elucidation was as to which side caused the greatest trouble and after due consideration it was decided to operate on the right ear, as one was under the impression that the right titubation was due to irritation of the left external semicircular canal. And inasmuch as we believe the sense of location not to be well developed in deaf-mutes one hesitated to remove the peripheral organ of equilibrium on both sides, the more so in view of the serious results this procedure has on the lower animals.

The patient was admitted into the hospital and an operation was performed on May 2nd, 1905, with the assistance of Mr R. S. Cocke and Mr W. H. Bowen. A flap was formed in the following way. A scalpel was inserted into the meatus, with its edge directed forwards and upwards in such a way that the heel of the edge of the blade lay between the tragus and the commencement of the helix, the rest of the blade being directed between the junction of the anterior and superior walls of the meatus, in which direction the meatal wall was divided down to the bone (see arrow in Fig. 1). On the knife being withdrawn the incision was carried upwards, close to the helix, until the upper border of the insertion of the concha to the head was reached; it was then carried backwards and downwards with a bold sweep, following much the same direction as is usual in a post-aural operation, but without bringing the lower part of the incision materially forward (see Fig. 1, *a*). The ear and external meatus were then rapidly dissected out and turned downwards, being, as it were, unrolled, and laid on the tissues of the neck, below the angle of the jaw, and inclosed in sterilised antiseptic gauze. This method of dealing with the ear not only

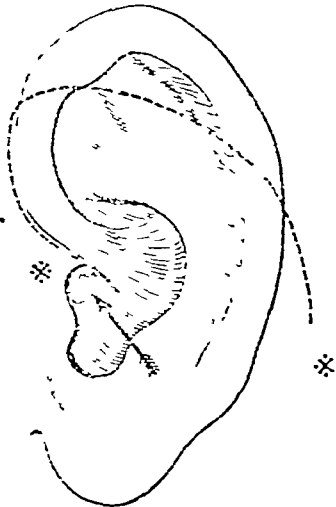
¹ Berliner Klinische Wochenschrift, 1875, Band xli.

² Centralblatt für Innere Medizin, 1896, Band xvii., p. 177.

permitted an excellent view of the parts but enabled one in working to avoid any possible injury to the meatal wall in any part. At the same time the auricle being absolutely removed from the field of operation retractors were dispensed with; also as the wound was deepened far more light was available in its deeper parts than is obtainable by other methods. If any difficulty is found in retaining the ear in the position suggested it can be kept there either by means

next step in the operation was to obtain free access to the vestibule. This was done by cutting a third hole into the vestibule, between the two described, with a burr made on the principle of a carpenter's bit, and chiselling away the small bridges of bone left between the three openings. This is done with an extremely fine chisel, highly tempered, and cut with a high pitch. The opening into the vestibule was then enlarged in every direction by means of this fine chisel

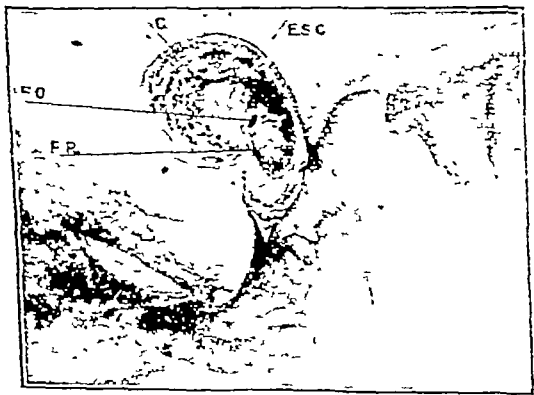
FIG. 1.



The dotted line from * to * shows the line of incision, the arrow the direction in which the meatus is divided.

of a stitch holding it to the skin under the chin or by attaching to its raw surface a pair or two of artery forceps. As a result of the previous operations the bony semicircular canal was very quickly exposed to view. By means of a small gouge the whole of its upper surface was rapidly cleared from the more porous bone immediately suprajacent (see Fig. 2). The upper surface of this external

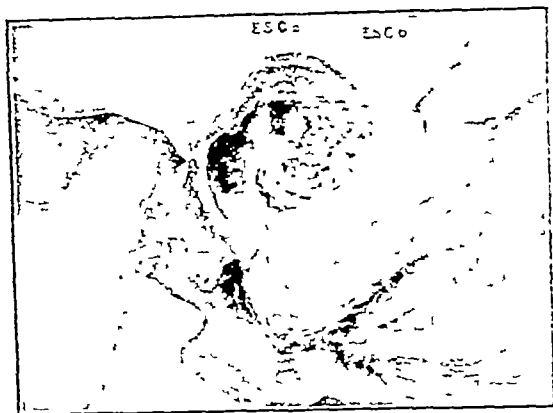
FIG. 2.



The completed radical mastoid operation, showing E.C., External semicircular canal. C. A large deep mastoid or petromastoid cell. F.O. and F.R. The oval and round windows. (The posterior meatal wall is not so completely cut away as for suppurative disease.)

semicircular canal was then removed by a burr until the membranous canal was opened (see Fig. 3). And it might be well to point out that the diameter of this canal does not exceed a twentieth of an inch. The canal was then followed up along its anterior and posterior limbs, posteriorly until the increase in its calibre notified the close proximity of the ampulla and anteriorly until its slightly backward direction indicated the near approach to the vestibule. For the canals are not really semicircular but rather exceed this. The

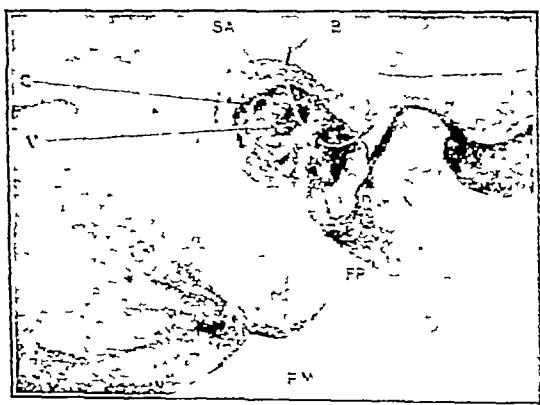
FIG. 3.



E.S.C. and P.S.C. The anterior and posterior limbs of the external canal, which are followed up into the vestibule.

(Fig. 4). The commencement of the superior canal was freely opened and its ampulla was scraped out. It was more difficult in this case to open the posterior ampulla as the posterior canal was situated at an extremely low level, as is not infrequently the case. The canals themselves, posterior and superior, were not interfered with. The next stage in the operation consisted in freely opening the foramen ovale by abstracting the foot-plate of the stapes so that no fluids could be retained in the opened vestibule. The whole operation cavity was then cleansed with a strong antiseptic

FIG. 4.



The completed operation. B. Bristle passing through vestibule (v) and oval window. S.A. Ampulla of superior canal. C. Cell. F.M. Bar of bone containing facial canal. F.O. Foramen ovale.

solution and well filled with oily iodoform emulsion. The operation cavity was filled with sterilised gauze, the end of which was brought out to the meatus, and the ear replaced, the greatest care being taken to see that the helix came back into its original position. No further division of the meatal wall was made rapid healing in these cases being a desideratum and the preservation of the operation cavity not particularly desirable, as hearing in this instance had been completely lost for so long a period.

The after-history of this case was absolutely uneventful.

There was no shock, nystagmus, or vertigo. At the end of three weeks the patient was able to walk very fairly straight, to go up and down stairs, and to perform any actions she chose without any inconvenience, though she now complains that the giddiness, still present on the left side, is so severe that she wishes an operation performed on that side also. The scar is scarcely visible; there was a slight and transient facial paresis.

Remarks.—In considering the history of this operation one must refer to the stimulus given to operative work on the labyrinth of the internal ear, which originated from two special causes. The first of these causes was undoubtedly the marked relief afforded to sufferers from *tic douloureux* by the removal of the Gasserian ganglion within the skull and the second was the brilliant results which ensued when suppurative labyrinthitis was treated by correct surgical methods. Undoubtedly the first of these causes acted more directly on the general surgeon and led him to attempt the heroic operation of dividing the auditory nerve within the skull, while the second cause more directly appealed to the aural surgeon.

I shall not in this paper discuss or describe, even shortly, the various methods which have been employed for division of the auditory nerve within the skull, not on account of the high mortality which has followed these operations, but chiefly for the reason that they were all published prior to the publication of any operative work on the intact labyrinth and because it seems that we have every reason to believe that where intracranial division of the auditory nerve has been successful direct destruction of the posterior half of the membranous labyrinth would have been equally efficacious as far as vertigo is concerned; but what is of greater importance still, judging by the six published cases, the latter operation is without risk to life. Here, as elsewhere in surgery, absolute priority in publication is not a matter of any great moment. This is the more so in this instance, as priority of operation was not accompanied by priority of publication; for whilst the honour of having performed the first operation on the labyrinth in non-suppurative disease of the middle ear for the relief of vertigo belongs to Milligan,¹ the writer antedated him as far as publication is concerned.² Consequently the real credit for the initiation of operative interference with the labyrinth may be equally claimed by both. It is hardly necessary to add that I was unaware of Milligan's work at the time.

I have in this article omitted all reference to tests with regard to hearing power, though it may be taken that, as far as one can judge, in other cases the operation was justifiable, as it is quite certain that the result in each case was successful. After reviewing the published cases one is forced reluctantly to the conclusion that, while brilliant results are obtained for the relief of vertigo, yet with regard to intolerable tinnitus aurium and noises in the head, where ordinary remedies fail, judging by the results of published cases, neither intracranial nor intralabyrinthine operations promise great hope of relief.

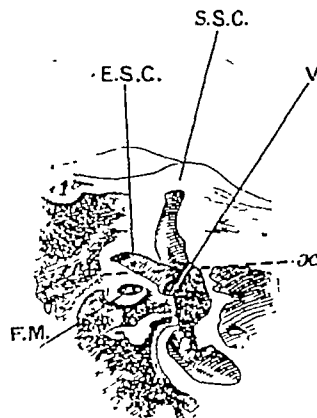
In considering the evolution of this operation it is somewhat remarkable that Milligan's operations, of which there were three, consisted in the removal of the external canal only, leaving uninjured the ampulla, while my first operation went a step further by including the removal of all of the semicircular canal, allowing free entry into the vestibule. In all these cases severe constitutional disturbance followed, which was of some considerable duration and was marked by a temporary increase in the vertigo and by transient shock. From these cases I was led to consider that the proper method was to attack the vestibule, thereby removing the whole of the vestibular fluid and destroying the ampullary nerves and obliterating entirely the lining membrane of the vestibule.

The next step in the operative history under consideration was illustrated by a case in which I had had the misfortune to destroy the facial nerve when attacking the cochlea. This I turned to good account by removing the whole anterior wall of the vestibule and the ampullæ of the various canals. Such a case as this, however useless as a precedent, serves to demonstrate the correctness of the view which I have promulgated—viz., that it was the vestibule that should be attacked, and that the destruction of the canals themselves then becomes of secondary importance, but it is obvious that as long as the facial nerve is intact the whole of the external

wall of the vestibule cannot be readily removed as the facial nerve crosses the vestibule between the external semicircular canal above and the foramen ovale below.

The sixth operation for intolerable vertigo is the one now reported. In this case I was enabled to carry out what I believe will prove to be the correct operative procedure to follow in cases of incurable and intolerable aural vertigo. To recapitulate briefly: after exposing the bony semicircular canal its upper surface is cut away with the electric burr until the membranous canal is opened. This canal is then followed up anteriorly and posteriorly to the entrance into the vestibule. Then, by means of a small chisel, these two openings are connected by cutting away the intervening bone. Having once obtained a free entry into the vestibule the whole of its upper surface, or the vestibular roof, is rapidly removed in such a way as to expose the entrance to the posterior ampullary dilatation. All of the exposed parts of the vestibule and ampullæ are carefully curetted with a fine curette. The next step is to see that thorough drainage is afforded to the small bone-locked cavity, which is done by removing the foot-plate of the stapes. This completes the operation, the facial nerve, sheathed in bone, lying between the openings into the vestibule. In (Fig. 5) it will be seen that the widest part of

FIG. 5.



To show transverse section of vestibule (V). F.M., Facial nerve. E.S.C. and S.S.C., External and superior canals, and at z is a dotted line to show the level at which the vestibule is opened.

the labyrinth is where the opening is made, thereby enabling one to obtain the freest entry into this cavity. We have now six cases on record in all of which relief has been afforded to a symptom of considerable gravity, for patients suffering from aural vertigo are unable to go about their business with comfort and are often indeed unable to cross a street unaided.

The evolution of the operation has been marked by a steady progress, the removal of the canals alone being followed by unpleasant symptoms, whereas the bolder operation of clearing out the vestibule has not been followed by any untoward symptom whatever, the patients being up and about within a week. And it is also with a certain sense of satisfaction that, as far as I have been able to learn, this operation has been attempted nowhere beyond the confines of Great Britain.

The flap described in this case is one which I have no hesitation in recommending as a suitable means of exposing the field of operation where it is necessary to work deeply into the petrous bone, though it is scarcely a procedure that will as yet commend itself for use in the ordinary radical mastoid operation, though the freedom which one obtains by its use might certainly tempt one to employ it more widely than intralabyrinthine operations alone would permit.

Harley street, W.

ROYAL ALBERT HOSPITAL, DEVONPORT.—As a result of the special appeal issued by the committee of the Royal Albert Hospital, Devonport, the sum of £700 has been already received. The appeal states that during the past year 4299 patients were treated, of whom 798 were in-patients, the daily average number of occupied beds being 46.9. The expenditure for the past 12 months was £4536, whilst the income to be relied on was only £3200.

¹ Journal of the British Laryngological, Rhinological, and Otolological Association, August, 1904.
² THE LANCET, June 4th, 1904, p. 1567.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SYPHILIS FOLLOWING THE BITE OF A HUMAN BEING.

By JAMES GARVIE McNAUGHTON, M.D. EDIN.,
M.R.C.P. EDIN.

A WOMAN, aged 55 years, who was sent by her medical attendant to the Throat Hospital, Manchester, for further treatment gave the following history of her symptoms. On August 11th, 1935, she was bitten on the back of the hand by a woman and a sore which required about six weeks to heal subsequently formed at the place. About five weeks after the bite spots began to appear on her body and a little later her hair began to come out.

When the patient was seen by me on Dec. 22nd the sore on the hand was quite healed, leaving a dark red scar of the size of a florin. The rash had quite disappeared but the woman was still suffering from condylomata. Her mouth showed several mucous patches, especially on the inner surface of the lips. In the larynx there was considerable infiltration of the inter-arytenoid region, with ulceration of one vocal cord. The patient is a widow; but there seemed to be no reason for believing that the disease had been contracted in any other way and her medical attendant has informed me that a primary sore developed at the seat of the bite. The comparative rarity of the communication of syphilis in this way seems to make the case worthy of record.

Manchester.

A CASE OF HEMATOCELE OF THE SPERMATIC CORD.

By W. DIXON HARTLEY, M.B., B.S. LOND., M.R.C.S. ENG.,
L.R.C.P. LOND.,

ASSISTANT MEDICAL OFFICER AT THE BOLINGBROKE HOSPITAL,
WANDSWORTH COMMON, S.W.

THE patient, who was a tall youth of average build and 20 years of age, was playing cricket on August 26th, 1935, as wicket-keeper, when a medium-paced ball struck him just above the left pubic spine. He did not feel much pain at the time and went on playing, the game not being at all delayed. About an hour afterwards he felt pain on walking and noticed that flexion of the thigh had become difficult owing to a feeling of stiffness. There was no sign of bruising but he found that there was a lump over the region of the left pubic spine. He rubbed the part regularly with embrocation but the pain was not relieved. He went to the out-patient department of the Bolingbroke Hospital on Sept. 5th, by which time the swelling over the pubic spine had subsided and some little discolouration of the skin had appeared.

On examination there was felt in the left side of the scrotum a tumour which was continuous with a considerable thickening of the spermatic cord above it. As the thickened cord was traced upwards its diameter gradually diminished but the upper limit was very indefinite, being situated about the centre of the external abdominal ring. At the upper margin of the scrotum the cord was two-thirds of an inch in diameter. It was rounded in outline and hard but it yielded slightly under the pressure of the finger. There were no signs of hernia, the thickened cord being raised on coughing. Continuous with the cord above and extending for two and a half inches downwards into the scrotum was a sausage-shaped swelling one inch in diameter, with a full rounded end, placed a quarter of an inch above the left testicle—this organ being raised half an inch higher than its fellow of the other side. In front and at the sides the scrotal tumour was rounded and perfectly smooth in outline and configuration; whilst on its posterior aspect the constituents of the cord could be left spreading over it, the vas deferens being easily traceable

throughout its extent. The tumour was firm but pliable to digital pressure. It was not transparent to transmitted light and was not reducible. It had no connexion whatever with the tunica vaginalis and there was no effusion present in the latter sac. The spermatic veins were not enlarged on either side. There was no weakness of the abdominal walls and the thickened cord was moveable from side to side. On Sept. 8th the scrotal tumour had extended further downwards and was in contact with the testicle but could be separated from it. Its lower extremity was larger, had become more flattered, and bulged into the tunica vaginalis.

The diagnosis was hæmatocele of the spermatic cord following an injury. The patient had never suffered from hernia, but his father had had an inguinal hernia all his life. The hæmorrhage in these cases seems to occur into a pre-existing sac, probably a portion of the funicular process, which has become closed at each end in the course of development. It is difficult to imagine how a diffuse hæmorrhage into the tissues of the cord could present the physical signs described above, especially the full rounded lower limit and the definite sausage-shaped tumour, as the blood in such a case would tend to gravitate still further downwards and to envelope the testicle.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORAGANI De Sed. et Caus. Morb., lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF PHLEBOLITHS SIMULATING SUBCUTANEOUS FIBROUS NODULES.

(Under the care of Dr. ROLLESTON.)

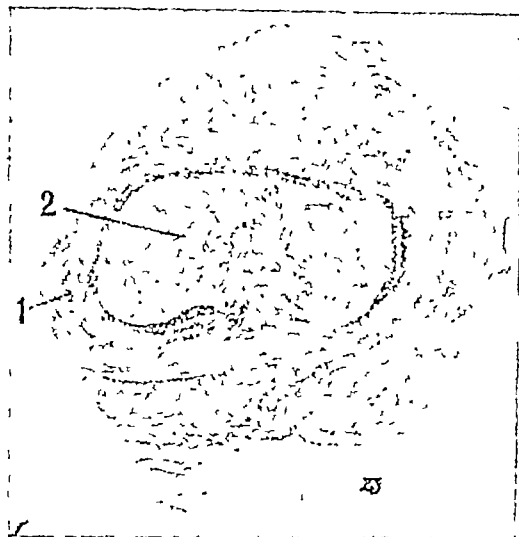
A WOMAN, aged about 50 years, was admitted into St. George's Hospital under the care of Dr. H. D. Rolleston on Nov. 18th, 1935, with subacute gastritis from which she rapidly recovered. She had twice had an "ulcerated sore throat," when a child and 12 years ago, but had never had rheumatism or chorea. The joints did not show any evidence of arthritis deformans and there was no sign of von Recklinghausen's disease (generalised neurofibromatosis).

Remarks by Dr. ROLLESTON.—The point of interest in this case was the presence under the skin over both shins of numbers of discrete, small, hard, painless, moveable nodules of the size of minute shot or less; these nodules were not attached to the bone or to the skin. There was a bunch of varicose veins on the inner side of the left thigh just above the knee and some small superficial varicose veins were visible over the front of both shins, but there was no manifest continuity between these veins and the small subcutaneous nodules. No similar nodules were found elsewhere in the body. There was some doubt as to the nature of these nodules, which closely simulated the well-known transient nodules seen in the acute rheumatism of childhood and, except for the absence of tenderness, resembled the nodules sometimes found in a number of conditions summarised by Dr. G. Newton Pitt¹ and Professor R. Stockman,² such as arthritis deformans, gonorrhœal rheumatism, "chronic rheumatism," influenza, and syphilis. One of the small nodules was therefore excised under cocaine. When cut across it had to the naked eye the appearance of a calcified vessel containing some calcareous material. After the necessary decalcification it was cut, the microscopic appearances being (vide figure) those of a vein with some calcification of its walls and calcareous material occupying its lumen; there were no recognisable blood corpuscles in it. The nodule would therefore appear to be a dilated portion of a vein in which

¹ G. N. Pitt: Transactions of the Clinical Society, vol. xxvii, 1894, p. 54.

² R. Stockman: The Causes, Pathology, and Treatment of Chronic Rheumatism.

the blood had clotted and subsequently undergone calcification; in other words, of a phlebolith in a vein showing some calcification. These appearances are entirely unlike those of the rheumatic nodule as described and figured by Dr. F. J. Poynton and Dr. G. F. Still.² As bearing on the production



Section of phlebolith in a subcutaneous vein imitating a fibrous nodule. Low power. 1. Calcification of wall of the vein. 2. Calcareous material inside the vein.

of these phleboliths it may be mentioned that the patient, who had to be on her legs a good deal, had been accustomed to wear elastic stockings because she had suffered inconvenience from the varicose veins in the lower extremities. It seems probable that the firm pressure thus exerted over the bony surface of the shins first led to the formation of local dilatations and diverticula in the small subcutaneous veins, then to isolation of, and thrombosis of the blood in, these diverticula, and so eventually to the presence of the phleboliths.

For the drawing here reproduced I am much indebted to Mr. Lawrence Jones.

BRISTOL GENERAL HOSPITAL.

A CASE OF THE STOKES-ADAMS SYNDROME, WITH NECROPSY.

FOR the notes of the case we are indebted to Dr. A. Rendle Short.

A man, aged 51 years, a painter, came under treatment on August 27th, 1905, complaining of fits. There was nothing of interest in the family history. With regard to his previous history he was in perfect health till 18 months ago, when he had an attack of "influenza" and was treated in the Bristol Royal Infirmary. Since then he had suffered from headaches and giddiness. The first fit was on June 12th last. The patient denied syphilis and had not been a heavy drinker. He had never had any symptoms of lead poisoning. He had not had rheumatic fever or chorea. Last June he had six fits in one week and had been having them occasionally ever since, about one or two a week. He also suffered from giddiness and had had headaches, but not recently. There had been no vomiting and the sight was good. The patient's description of a fit was as follows. He did not know beforehand when one was coming on. He suddenly felt giddy and at once became unconscious. He did not know if he cried out or if he was convulsed. He rapidly recovered and felt perfectly well afterwards, and was not at all sleepy. He had passed urine during the fits but had not bitten his tongue. The last fit was on August 27th, when he fell and sustained a scalp wound; this was the immediate cause of his coming under treatment. He also complained of running of the left ear for several months; it

had been slight and he had paid it little attention and could give no details. He had not had a sore throat. He also complained of sciatica in the right leg and hip.

His condition on examination was as follows. The patient was a powerfully built, intelligent man. There was a superficial scalp wound on the occiput. The pulse at the wrist on the 27th when first seen was 12; on the 28th it was 20, very irregular in force and frequency, with alternately large and small beats; the tension was high and the artery was thickened. Later in the day the pulse-rate was 44. The apex beat was always the same as the pulse, but there was pulsation in the veins of the neck at the rate of about 60. The apex beat was in the nipple line, in the fifth space, and fairly forcible. As to the heart sounds, there were a soft systolic murmur at the apex and a systolic murmur at the aortic area, also heard in the neck. The auricular systole was heard as well as the ventricular. The aortic second sound was accentuated. There was no thrill and the cardiac dulness was normal. The bowels were regular, the tongue was clean, and there was no blue line on the gums. The sleep was good. The temperature was normal. There was a little discharge from the left ear. The nervous system was normal. The pupils were equal and reacted to light and to accommodation. There was no optic neuritis but the vessels were thickened. The knee-jerks were equal and normal. The urine was acid, of specific gravity 1020, and contained no albumin or sugar; the daily quantity was 28 ounces. The patient was given seven drops of tincture of nuxvomica three times a day and kept in bed. Aspirin was given for the sciatica. On the 29th the pulse at the wrist was 44; the venous pulse in the neck was 60. At 2 P.M., whilst being examined, the patient had a "fit." It began without any warning or cry. He commenced to turn his head slowly and stiffly to the right; the eyes also deviated to the right. There were no clonic spasms of the head, the eyes, or the limbs. He was quite unconscious. The face became bluer and bluer and the respirations were quick and deep. He did not pass urine. The attack lasted 30 seconds and ended by his drawing up his legs and trying to sit up. He then suddenly regained consciousness and was not in the least confused. The attack passed off with such unexpected rapidity that unfortunately the opportunity was lost to feel the pulse or to listen to the heart. On the 30th at 6.30 A.M. Dr. Short was called to see the patient. Whilst being washed he suddenly stopped breathing, became unconscious, got very blue, and died. He was quite dead when Dr. Short got to the bedside. Artificial respiration and external massage of the heart were performed but in vain.

Necropsy.—The meninges were very oedematous and the pial vessels were full. The brain was soft and watery. No neoplasm or abscess was present. The left middle ear contained granulation tissue and the drum was perforated. The mastoid antrum also contained granulations. The temporal bone was normal and the dura mater was not loosened over it. The lungs were congested. The heart was not dilated: the auriculo-ventricular openings were of normal size. The left ventricle was a little hypertrophied. The mitral valve flaps were thickened and the chordæ tendinæ were thick and shortened. The endothelium and the musculi papillares showed white fibrous patches of thickening, which were quite superficial. The aortic valves were normal but there was a patch of atheroma in the aorta just above them. The aorta was only moderately atheromatous. The coronary vessels were traced throughout but showed no atheroma or thrombosis. The heart muscle showed a few scattered patches of fibrosis not well marked. The kidneys were of normal size; the cortex was a very little diminished and the surface was slightly granular; the capsule was slightly adherent. The spleen showed fibrous capsulitis. The other organs were normal. The cerebral cortex was examined microscopically and the cells were found to be normal. The Nissl granules were normal. The aortic nerves and vessel wall were also examined microscopically, but unfortunately the material kept did not contain any ganglia. The nerves were normal; the aorta was atheromatous.

Remarks by Dr. Short.—The association of (1) attacks of unconsciousness, in which tonic though not clonic spasm took place, and (2) a slow pulse with (3) otorrhœa suggested a diagnosis between Stokes-Adams syndrome complicated by otorrhœa and abscess of the brain. The normal temperature and absence of mastoid tenderness, drowsiness, optic neuritis, or localising symptoms were against the last-named, but perhaps the most important indication was the fact that

² Poynton and Still. Transactions of the Pathological Society, vol. 1., 1899, p. 324.

the venous pulse in the neck and the ventricular and radial pulses were asynchronous owing to the characteristic "heart block" of the Stokes-Adams syndrome. It is, however, interesting to note that Gowers points out that otorrhoea may cause slowing of the pulse. The necropsy showed no adequate cause of death. The fibrosis of the heart wall was but slight, the patches on the endocardium being quite superficial. The coronary arteries were quite free throughout from any trace of thrombosis or atheroma. Not having at that time realised the importance of the auriculo-ventricular band of His in these cases I unfortunately did not submit it to microscopical examination.

ST. VINCENT'S HOSPITAL, MELBOURNE.

A CASE OF LOCALISED INTRAPERITONEAL ABSCESS, ASSOCIATED WITH A PECULIAR FIBROID THICKENING OF THE MESENTERY.

(Under the care of Mr. G. A. SYME.)

THE patient, a married woman, aged 50 years, was admitted into St. Vincent's Hospital on Oct. 25th, 1904, complaining of abdominal pain and attacks of vomiting, with progressive loss of flesh. Her illness began 12 months previously with pain in the stomach, coming on after meals. She was treated for indigestion and improved somewhat, but after a time the pain became worse and was accompanied by vomiting after eating solid food. The vomiting relieved the pain. She was then restricted to a liquid diet, but vomiting and pain came on again and she began to lose weight. Her bowels had always been regular. She had never had jaundice. The menopause occurred five years previously. There was no history of previous illness.

On admission the temperature was 100° F., the pulse-rate was 120, and the respirations were 24. The right abdomen was rather rigid and tender from the costal margin to the iliac crest. The rigidity and tenderness were most marked just above, and to the right of, the umbilicus. In this region an ill-defined swelling could be made out. She had a slight leucorrhoeal discharge, but a vaginal examination revealed no abnormality. The tongue was tremulous and rather furred. The urine was normal except for a copious deposit of urates. The patient was kept under observation for some time. The temperature remained about 100° in the evening and normal or 99° in the morning. She vomited occasionally, chiefly mucus, once tinged with blood. The swelling in the umbilical region became more distinct and seemed more elastic and doubtfully fluctuant. The tenderness became more marked.

On Nov. 10th the patient was anaesthetised with chloroform and the abdomen was opened by an incision in the midline at and below the umbilicus. A thick, inflamed mass of adherent omentum and small intestine presented. The adherent coils were carefully separated from one another and from the omentum, the whole mass being surrounded and protected by sterile gauze wet with sterile saline solution. As the adhesions were separated pus began to ooze up and was mopped up on sterile gauze. Eventually an abscess cavity was defined, walled by small intestine and its mesentery, the latter being infiltrated and thickened and the corresponding coil of bowel being purple in colour and deeply congested. The intestine was involved for an extent of nearly three feet and was resected. The mesentery was ligatured off with silk and the divided ends of the bowel were united by a continuous silk suture through all the coats and a continuous serous suture. The abdominal incision was closed with interrupted silkworm-gut sutures. The operation caused considerable shock but the patient rallied well, especially after a pint of saline solution was infused under each breast. Except for a stitch abscess she made an excellent recovery and wrote to Mr. Syme recently to say that she was perfectly well.

The removed portion was sent to the Pathological Laboratory, University of Melbourne, and the following report was received. "At intervals in the mesentery, near its attachment to the bowel, are patches which are thickened and firm to the touch. On section these patches appear fibrous with fibrous bands extending out into the fat. In some of the patches a fair-sized vessel is seen towards the centre. Nowhere are the vessels thrombosed. The larger vessels are somewhat thicker-walled than normal but this is not marked. New vessels are not very numerous. Around some

of the larger vessels in the centre organisation has occurred into fibrous tissue with elongate nuclei. At the spreading margin are numerous large cells, fibro-blastic in character, with active nuclei. Organisms were stained for specially but none discovered. The condition is a chronic inflammatory one."

Remarks by Mr. SYME.—The pathological condition in the above case was obscure and I have been unable to find any record of an exactly similar case. Mr. J. Bland-Sutton, in a paper on the Effects of Perforation of the Colon by Small Foreign Bodies, especially in Relation to Abscess of an Epiploic Appendix,¹ has reported cases of intraperitoneal abscess due to small foreign bodies which had escaped from the large intestine. It seemed a possible explanation of this case that, in similar fashion, a small foreign body might have made its way from the small intestine into the mesentery. But no such cause could be found. It is difficult to say whether the changes in the mesentery were primary or secondary to the suppuration. At the time of operation it seemed most probable that the changes were due to some thrombosis of the mesenteric vessels and for that reason it was decided to resect the bowel, which certainly looked on the verge of gangrene. The pathological report on the removed specimen, however, showed that there was no thrombosis. The long duration and relatively mild character of the symptoms were also remarkable.

Medical Societies.

LIVERPOOL MEDICAL INSTITUTION.

The Sanatorium Treatment of Consumption.

A MEETING of this society was held on Dec. 21st, 1905, Sir JAMES BARR, the President, being in the chair.

From 8 to 9 o'clock a number of clinical cases were exhibited. At 9 o'clock Dr. R. J. M. BUCHANAN and Dr. C. J. MACALISTER opened a discussion on the question, "Is the Sanatorium Treatment of Consumption Worth While?"

Dr. BUCHANAN said that in consumption as in other infective processes, some internal power was working towards recovery and much might be done by stimulating this power to action or in assisting it when inactive. In all cases of pulmonary tuberculosis, especially in the early stages, treatment was urgently called for and was usually followed by marked benefit. He pointed out the principles upon which the treatment of consumption should be based and said that these were indicated by our knowledge of etiological factors and the principles of hygienic and dietetic treatment, which were true, honest, sensible, and right, and demanded the advocacy of all true, honest, sensible, and right-minded members of the medical profession. These principles of treatment admitted of no discussion and were best carried out in a sanatorium worthy the name by a medical man who thoroughly believed in them and enforced them in a systematic and an exact manner, with the due amount of respect which their truth and importance demanded. Dr. Buchanan's personal experience of sanatorium treatment enabled him to say that he knew of no treatment so invigorating, so sensible, and so trustworthy, and which held out so much hope and encouragement, or which afforded so great a prospect of success.

Dr. MACALISTER said that his experience of sanatorium treatment had been disappointing, for although many of the cases had been sent in the early stages of the disease in nearly every instance a relapse had subsequently occurred. He commented upon the utter futility of treating the poor in sanatoriums and pointed out that those patients who subsequently died from pulmonary tuberculosis did so in much the same period as they would have done had they never been in one of these institutions. The death-rate from pulmonary tuberculosis had not diminished to any great extent since the advent of the sanatorium treatment, and judging from the figures of those who kept careful records in the pre-sanatorium days the recovery-rate and the death-rate of the disease were about the same as they were in patients treated in sanatoriums. Dr. Macalister

thought that many of the most successful sanatorium cases represented patients in whom a strong tendency to recovery existed and mentioned his experience with patients presenting this tendency. He thought that the personal factor had more to do with recovery than any special line of treatment. He advocated the construction of inexpensive buildings for sanatoriums so that more money might be devoted to the maintenance of a larger number of cases, both early and more advanced. He thought that the best way of dealing with the problem was to endeavour to prevent the disease by exercising much stringency with reference to known elements of infection and by adequate disinfection of dwellings inhabited by persons suffering from pulmonary tuberculosis.

Mr. COLIN CAMPBELL thought it unfortunate that after 10 or 12 years of sanatorium treatment facts remained so few and statistics so inconclusive or contradictory. The utmost confusion still existed as regards the classification of cases and vagueness in the reports of the various forms of cures, so called, obtained. Favourable results lay somewhere between the 60 per cent. of "economic cures" reported from Germany and three out of 38 cases reported from Heswall in which the disease was "arrested."

Dr. G. A. CRACE-CALVERT said that statistics of sanatorium results were adversely affected by the very short stay many patients made, often six weeks or less, by the kind of work to which a patient had to return, and by the surroundings, often the most unsuitable, to which patients returned. He emphasised the necessity of sending early cases to the sanatorium, for the great majority did excellently, and it was wise to send such patients to the sanatorium first and to the country afterwards, because they then early learnt how to carry out treatment and much valuable time was saved.

Dr. J. ERNEST NEVINS considered that as Poor-law authorities and other public bodies were being urged to erect sanatoriums, the phrase "worth while" should be judged from the point of view of social economy, in which case the decision would be unfavourable. Many sanatorium enthusiasts had admitted that results were unsatisfactory but the blame was thrown on the patients who were "unsuitable." The conditions necessary to make a case "suitable" were impossible for the vast majority of consumptives, and it was little or no use teaching a man a mode of life which his social circumstances would never allow him to carry out.

Dr. W. B. H. WOOD, Dr. T. R. GLYNN, Dr. A. L. MORGAN, Dr. W. B. WARRINGTON, Dr. NATHAN RAW, Dr. A. G. GULLAN, Dr. E. T. DAVIES, and the PRESIDENT also took part in the discussion.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

—A meeting of this society was held on Dec. 15th, 1905, Dr. Leonard G. Guthrie being in the chair.—Dr. J. G. Emanuel (Birmingham) opened a discussion on the Bacteriology and Pathology of Pleural Effusions. He said that serous effusions were four times as common as purulent effusions in adults, but in children they occurred in practically equal numbers. In adults a purulent effusion was often secondary to a serous one, but in children it was generally purulent from the first. Of empyemata 75 per cent. were pneumococcal and these might be either secondary to pneumonia or primary. Streptococcal empyema was rare in children but common in adults. Empyemata containing staphylococci often indicated tuberculosis. An empyema complicating a case of pulmonary tuberculosis was generally pneumococcal or streptococcal. The naked-eye appearance of the pus was not trustworthy indicator of the micro organism. There was no essential bacteriological difference between serous and purulent effusions.—Mr. J. P. Lockhart Mummery said that cases of empyema in children could be conveniently divided into two classes—namely (1) those where the infection was purely pneumococcal and (2) those where a mixed septic or tuberculous infection existed. The great majority of cases were pneumococcal and in these a free exit for the pus was all that was required; drainage for any length of time was not required, and it was often unnecessary to use a drainage-tube at all. In the other class of cases and in those where much thickening of the pleura existed good drainage was always necessary. He advised irrigation of the pleural cavity with water or salt solution in suitable cases and considered that the fatal results which have sometimes followed this practice were to be attributed to the iodine or carbolic acid solution used. He was of opinion that the after-treatment of cases of empyema in children was very important and that the thoracic movements ought not to be restricted by tight

bandages or heavy bedclothes. He advised that respiratory exercises should be used to re-expand the lung in all cases—at first expiration against resistance to enable the sound lung to expand the affected one and at a later stage regular respiratory and muscular exercises in a surgical gymnasium which should by preference be carried out in classes of several children by a skilled instructor.—Dr. G. A. Sutherland referred to the frequent absence and slight character of the symptoms in many cases of moderate pleural effusion. Breathlessness and tiredness on exertion were the commonest symptoms complained of. Coughing, pyrexia, wasting, and anemia were often present but were not diagnostic. A lemon-coloured skin and clubbing of the fingers which had developed rapidly and without cyanosis were strongly suggestive of purulent effusion.—Dr. Edmund Hobhouse (Brighton) said that acute pleurisy could be cut short and effusion prevented by active measures in the early stage, but when once effusion had fairly commenced it was very doubtful whether it could be cut short by any medical measures. Two or three different lines of treatment have been pursued by different authorities. In the first instance it was sought to reduce the quantity of fluid by increasing the fluid output and reducing the intake. With this object diuretics, diaphoretics, and purgatives were given freely and a thirst diet was adopted; but most authorities were now agreed that the results attained were by no means proportionate to the discomfort entailed. If a reasonable trial of medical measures were insufficient to reduce the effusion it would be necessary to remove the fluid by puncture.—Dr. W. J. S. Bythell said that about three years ago he was led to undertake the investigation of the bacteriology of empyema in children, and the objects at which he aimed were to determine (1) the source of infection of the pleura, (2) the species of micro-organism, and (3) the influence of the bacteriology upon the clinical features of the disease. In 40 cases of empyema occurring in children whose ages varied between 10 months and 11 years, and of whom 27 were males and 13 were females, the source of infection in over 80 per cent. was undoubtedly an acute broncho-pneumonia, in 10 per cent. it was an acute pneumococcal infection of a pre-existing pulmonary tuberculosis, and in another case it followed upon a sarcoma of the lung. In six cases the empyema appeared to be "primary." The influence of age upon the species of bacteria was well known and his result fully confirmed the great relative frequency of pneumococcus; the actual percentage in his cases was 90 alone or with streptococcus.—Dr. W. Ewart read the notes of a case under his care at the Belgrave Hospital of a boy, aged 10½ years, treated by paracentesis, by syphonage, and the admission of air into the pleural cavity, with subsequent relapse of the effusion, which was treated by intrapleural injections of adrenalin solution without paracentesis with rapid recovery.—Mr. L. S. Dudgeon said that during the last five years he had made many examinations of the fluid taken from the chest in cases of serous and purulent effusion. If the fluid was clear and the cells, either in few or large numbers, consisted entirely of lymphocytes he thought that the case might be definitely said to be tuberculous. If, on the other hand, what was described as the polynuclear phagocyte was found it could be said that the case was due to one of the pathogenic organisms. Another point, to which reference was not made, was that in one case he found a very large number of cells which showed active mitotic figures, and post mortem the child was found to have suffered from diffuse sarcoma of the chest cavity and pleura.—Mr. Arthur Edmunds said that he desired to exhibit an apparatus to demonstrate the importance in relieving empyema of making the opening into the chest sufficiently free to allow of the pus being forced out voluntarily.

ROYAL ACADEMY OF MEDICINE IN IRELAND; SECTION OF OBSTETRICS.

—A meeting of this section was held on Dec. 15th, Dr. R. D. Parefoy, the President, being in the chair.—Dr. R. C. B. Maunsell showed a Uterus removed by Wertheim's Method for Carcinoma of the Cervix. He said that he thought that the operation should be performed if possible, for he believed that the suffering was less when a patient died from a secondary growth, as in the liver, than from the primary one. The ureter had to be separated if the parametrium was to be extirpated and he thought that there was little danger of the ureter sloughing if it was not pinched in any way. He had found it somewhat difficult to carry out Wertheim's procedure—namely, to lay the finger on the ureter and pass the finger between the ureter

and the uterine vessels. The operation was rather lengthy.—Mr. E. Hastings Tweedy read a paper dealing with some points of interest in a series of 211 major operations performed by him in the Rotunda Hospital. These comprised 44 ovariectomies, nine panhysterectomies, 15 subtotal hysterectomies, 14 pyosalpingotomies, 32 ventrofixations, two anterior colpotomies, 11 salpingotomies, 15 tubal pregnancies, three ovarian resections, nine ventral hernias, seven radical operations for procidentia and one for tuberculous peritonitis, two vaginal hysterectomies for painfully retroverted uteri, two retroperitoneal sarcomata, four Caesarean sections, 18 vaginal fixations, seven abdominal myomectomies, ten vaginal myomectomies, one enterostomy, and five vaginal hysterectomies for cancer. There were eight deaths in this series—two under anaesthesia in profoundly septic patients, two in abdominal and one in vaginal hysterectomy for cancer, one after vaginal myomectomy, one after subtotal hysterectomy, and one after abdominal removal of purulent tubes. The skin wound showed some suppuration in five cases, staphylococcus albus in two, bacillus coli in one, and a diplococcus in a fourth, whilst the germ was not looked for in the fifth. Convalescence was delayed in none of these cases. Tubal disease to a greater or less extent was found in 19 of the 32 patients subjected to ventrofixation; nearly all these were sterile and an effort was made in every instance to remove the pathological state by breaking down adhesions, resecting ovaries, and opening the lumen of the tube. He believed that neither Mackenrodt nor Wertheim had succeeded in establishing their operations for cancer on a permanent basis. Mr. Tweedy dealt with his method of closing the abdomen in layers and by means of a leaden plate, and pointed out that in a recent Caesarean section, undertaken by him for the second time, no trace of silk was to be found either in the uterine or abdominal walls, nor had any adhesions formed in the neighbourhood of the scars. He described in detail the operative technique in force in the Rotunda Hospital and the simple and inexpensive design of the theatre. None of his failures were attributed to architectural deficiencies in his operating-room, which he believed to be adequate for the requirements of aseptic surgery. In its simplicity it furnished a crushing argument against the lavish expenditure so fashionable in the present day.—Dr. H. Jellett said that he agreed with Mr. Tweedy in his views on expenditure on operating theatres. He also approved of having the windows open during operations. He thought that the sterilising apparatus should be removed to some distance from the theatre as the air could at present be contaminated by it. He was inclined to think that face-masks were not really necessary if the operator took proper care of his teeth.—Dr. F. W. Kidd said he thought that many cases of sterility were due to the condition of the male. He approved of wearing masks as a certain amount of sputum was kept out of the field of operation by them.—Dr. A. J. Horne agreed that the enormous expenditure incurred in making theatres was to be deprecated. He appreciated the strict asepsis of Mr. Tweedy and suggested that the nurses also should wear masks. The fact of so many stitch abscesses having occurred showed that, no matter what care was taken, accidents would happen.—The President said that he had not made the use of indiarubber gloves a general practice. Many operators stated that their successes were not materially increased by the use of these gloves and the difficulty of manipulation was certainly increased.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—

A meeting of this society was held on Dec. 20th, 1905. Mr. T. J. Dabell, the President, being in the chair.—Mr. R. G. Hogarth showed a girl, aged 12 years, from whom he had 14 weeks previously removed a Hydatid Cyst in the Liver. Although only a small lump could be felt through the abdominal wall the left lobe of the liver was found at the operation to be enlarged enormously, reaching nearly to the umbilicus. After incision and evacuation of the numerous daughter cysts, which completely filled the mother cyst, the latter was peeled off. The liver was indurated and fibrous around the cyst and was stitched to the abdominal wound without difficulty. Drainage was provided for and bile escaped from the wound for a long time, though the wound eventually healed soundly.—Dr. H. Michie, in opening a discussion on the Treatment of Uterine Prolapse, said that it was not easy to explain why the uterus should descend in some cases and not in others. By the aid of a diagram of a transverse section of the female pelvis he demonstrated what he believed to be

the chief structures concerned in retaining the uterus in its normal position and placed them in the following order of importance: the utero-sacral ligaments, the utero-pelvic ligaments, the levatores ani muscles, the broad and round ligaments, and the perineal body. In his experience it was quite rare to meet with complete rupture of the perineum and prolapse of the uterus in the same subject. He pointed out that the uterine ligaments, though composed of the same kind of tissue, were not ligaments in quite the same sense as were the ligaments of joints, the latter being more compact, unyielding, and attached to fixed points. Since, under normal conditions the uterine ligaments, sacral and pelvic, could be quite easily felt, both from the vagina and from the inside of the pelvis, whilst in cases of pronounced prolapse these structures could not be made out at all, he considered that this was important evidence of their function; and considering that the complaint occurred for the most part in women past the prime of life, as did other forms of hernia, he believed it was due, as in these, to relaxation and attenuation of the tissues and especially of the fibrous and tendinous structures. From its comparative frequency in spinsters he did not consider that pregnancy and labour had so much to do with its production as was generally supposed. In discussing treatment, Dr. Michie said that inasmuch as worn-out tissues could not be replaced or renewed prolapse of the uterus could not be completely cured, and that it was possible only to compensate for their defects by means of pessaries or to mend them in the best available way by one or another of the many operations performed or recommended for this purpose. In his own practice he confined himself to the use of Hodge or ring pessaries as mechanical supports and for the most part to Tait's operation of extension of the perineum, with or without the removal of a greater or less extent of the vaginal walls. This operation, when well performed and modified according to circumstances, he believed to be more satisfactory than any other, and should recurrence take place, which he did not deny might happen after a longer or shorter interval, a pessary would still afford the requisite relief.—Dr. W. R. Smith dwelt on the importance of prophylactic measures in the milder cases, such as (1) rest, (2) the remedying of endometritis or any other cause of local congestion, and (3) the avoidance or reduction of anything determining downward pressure, such as tight-lacing, straining at stool, and especially chronic cough. In the matter of pessaries he thought that the combination fluid-ring pattern acted best; cup and stem pessaries were certainly very irksome. In a survey of operations recommended for the condition he passed in review perineorrhaphy, colporrhaphy (partial and complete), colectomy, and shortening the utero-sacral or round ligaments. On the whole, he favoured ventrofixation, combined with anterior or posterior colporrhaphy. In suitable cases this gave excellent results, while the risk was practically nil. Not the least important part of the treatment was the subsequent rest in bed for at least a month, especially if the stitches were taken out.—The President said that in view of the frequency of the condition any satisfactory operation would be a great boon. All pessaries were difficult to keep clean.—Dr. W. Hunter said that patients often derived great comfort from a ring pessary and failing that Napier's cup and stem gave good results. He alluded to a treatment by the injection of paraffin or quinine.—Mr. Hogarth said that repair or advancement of the perineum often made it possible to retain a pessary. Ventrofixation was not altogether satisfactory; in procidentia he thought that hysterectomy was the best operation, as it was easy and not dangerous.—Dr. R. Alderson said that he had known ventrofixation give excellent results which continued for two or three years after the operation. Silkworm-gut sutures were used and removed at the end of two weeks, while the patient kept her bed from four to six weeks.—Mr. W. Morley Willis pointed out the advantage of an intra-peritoneal shortening of the round ligaments, as distinguished from Alexander's operation, and the discussion was continued by Dr. James Watson, Dr. A. J. Sharp, Dr. S. E. Gill, and Miss Sarah Gray.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—

A meeting of this society was held on Dec. 15th, 1905. Dr. J. Lindsay Steven, the President, being in the chair.—Dr. J. H. Nicoll showed several patients from a further series of cases of Congenital Obstruction of the Pylorus treated by Operation. He said that division combined with gastro-enterostomy was the ideal operation for the affection but

that as regards the patient it was often inadmissible on account of the extreme debility generally present. In the six cases submitted an operation had been carried out by which division had been combined with a VY plastic operation on the pylorus. The cases were not shown as "cures," sufficient time not having yet elapsed to test that, but as demonstrating the low mortality of the operation. Only one of the six patients had died. Of the others four had apparently quite recovered, a period ranging from three to 12 months having elapsed since the operation.—Dr. Nicoll also showed several Prostates which had been recently removed by operation, with considerations based on an experience of 100 cases of prostatectomy. He held that the mortality-rate of prostatectomy was fairly put at 5 per cent. and was being steadily reduced. The choice of treatment, therefore, for those cases of prostatic retention not yielding to medical treatment was increasingly in favour of radical relief by operation as against regular catheterisation. He had seen no reason to alter his opinion published in 1894, that the first step in prostatectomy should be the suprapubic opening of the bladder, the operation being then completed by vesical or perineal enucleation as might be decided. He held that nothing essentially new in the technique of prostatectomy had been added during the past ten years.—Dr. G. B. Buchanan read a short paper on Scopolamine-Morphine Anaesthesia and reported four cases in which he had used it, following the method of Korff, recommended by Terrier. In none of his cases did general anaesthesia ensue and it was necessary to give a little chloroform in addition. Nevertheless, the effects of scopolamine as an adjunct to chloroform were very satisfactory. Fear and apprehension before the operation were absent, even in nervous patients; a very small quantity of chloroform was required, there was almost complete immunity to pain for the next 24 hours, and sickness was very slight. One of his cases showed marked slowness of breathing for half an hour (ten and even seven respirations per minute) but the patient was otherwise well. All the patients expressed satisfaction with the effects. Dr. Buchanan quoted a number of cases reported in various periodicals, amounting to 4245, including 408 cases of labour, and called special attention to a paper by Roith in the *Munchener Medizinische Wochenschrift*, in which amongst other points a series of deaths was recorded and discussed. Those, with three others reported by Ries in the *Annals of Surgery*, amounted to 23, all of which, however, except two or three, occurred in patients seriously disabled by disease and could not be ascribed directly to the anaesthetic. The conclusions arrived at by the most competent observers were the following. 1. That scopolamine and morphine should be employed as an adjunct to chloroform and not as a means in themselves of inducing full narcosis. 2. That pure scopolamine only should be used because hyoscine, with which it is said to be isomeric, gave uncertain and inconsistent results. 3. That small doses ($\frac{1}{16}$ th of a grain of scopolamine with $\frac{1}{4}$ th of a grain of morphine) should be injected from half an hour to an hour before operation, or if time allowed should be divided into two doses and given separately with an hour's interval between them. 4. That chloroform must be given in very small quantities, drop by drop, and should not be pushed to the point of abolishing the reflexes; that, however, constituted one of the disadvantages. Ether was much less satisfactory in that respect. 5. That special care was necessary with those suffering from diseases of the heart or kidneys, and with children. 6. That in old people the small dose of scopolamine was often sufficient to produce general narcosis without the aid of chloroform. 7. That the solutions must be freshly prepared each time and for that purpose tablets of scopolamine were now on the market.

CLINICAL SOCIETY OF MANCHESTER—A meeting of this society was held on Dec. 19th, 1905, Mr. E. T. Milner, the President, being in the chair.—Mr. E. Stannore Bishop showed several specimens and three patients illustrative of New Growths in the Sigmoid Flexure and Rectum. He specially drew attention to three points in connexion with this subject. In the first place it was found that whilst carcinoma undoubtedly attacked all parts of the large intestine, by far the largest majority of the cases occurred in the rectum. Many of the obstructive growths found in the sigmoid flexure were not carcinomatous but fibro-adenomatous and therefore innocent except for the obstruction which they produced. Two of the patients exhibited had had such growths removed from the sigmoid flexure, the bowel being re-united; one of these had been operated upon five

years before. The immediate risk to life from obstruction was the same in both carcinoma and fibro-adenoma but the ultimate results after removal were widely different. Sufficient attention had not, he believed, been directed to this peculiarity of sigmoid neoplasms. In the second place, there was an imperative necessity in all cases of obstruction from such growths for a preliminary temporary colotomy. He detailed a case under his care in which ineffective colotomy had been performed, with the course of events during and after the excision of the bowel at a later stage. The case ended fatally; it was indeed one long struggle with sepsis due to the passage of fecal material over the raw surfaces. He referred to Hupp's analysis of fatal cases, in which 50 per cent. died from sepsis, due, as Hartwell had remarked, to the infection of the parts by fecal material. He confuted the argument brought forward that such patients were unfit for two operations, showing that at the time of obstruction they were still more unfit for total resection and that colotomy instead of further weakening the patient was the one measure which allowed the possibility of recuperation. He emphasised the fact that at the time of obstruction the actual danger was not the growth at all but the accumulation of decomposed material behind it and the poisons contained therein. Other, though less important, reasons were also dwelt upon. In the third place, he showed a patient upon whom Kraskie's operation had been performed with the formation of a sacral anus. He demonstrated the disadvantages of this and suggested that in any case in which the amount of intestine requiring removal was too great to permit of the re-formation of the normal canal ending in a normal anus the operator would be wise in being either content with a simple inguinal colotomy or, should the growth be removable, in taking away the whole of the distal intestine, so that the end of the fecal tract should lie at the inguinal anus.—Dr. G. H. Lancashire read a paper on Some Skin Affections due to Pyogenic Organisms. After discussing the important question of the secondary pus infection of skin disease, some common infections primarily due to staphylococci and streptococci infection were described with their treatment. Mention was made and instances were given of other less recognised forms of pyogenic infection.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Royal Devon and Exeter Hospital on Dec. 14th, 1905, Dr. J. Mortimer being in the chair.—A vote of sympathy was unanimously passed to Dr. H. Davy in his recent bereavement.—Mr. A. C. Roper showed two cases of Sarcoma of the Upper Jaw, one before and the other after operation. He showed the tumour removed in the latter case and a microscopical section was exhibited, proving the tumour to be a large round- and oval celled sarcoma.—Mr. Roper also showed a Uterus with many Fibroids which he had removed by hysterectomy.—Mr. O. E. W. Bell read reports of two cases of Strangulated Hernia where the gut was gangrenous at the time of the operation. The first case was one of femoral hernia in a man, aged 64 years. The gut was gangrenous on operation and six inches of bowel were removed and the ends were stitched together, and the patient made a complete recovery. The second case was also one of femoral hernia in a woman aged 74 years. Here on operation it was found that the bowel had been completely divided by the process of sloughing at the seat of the constriction and that one end was loose in the peritoneal cavity which was full of faeces. The bowel was resected and the ends were sutured and the peritoneum was washed out but the patient died six hours later. In neither case was there much shock or pain, nor did the patient seem seriously ill.—Dr. J. Raglan Thomas opened a discussion on Physical Degeneration. He referred largely to the interdepartmental report on this subject. He laid special stress on the following signs of physical degeneration: (1) the majority of people, both children and adults, have bad teeth; (2) few mothers were able to nurse their own children; and (3) the stature of boys in industrial schools was very inferior to that of boys in public schools. He mentioned some of the probable causes of this physical degeneration or unfitness, such as the urbanisation of rural districts, the large amount of female labour, the consumption of tinned foods and decay of home cooking, the large amount of tea-drinking, the artificial feeding of infants on bad and insufficient food and tinned milk, and the moral contamination of both boys and girls who, lacking proper occupation in the evening, were forced out into the streets. He laid special

stress on the enormous infantile mortality, which was greater than it was 60 years ago. He mentioned three societies which in different ways tried to remedy this condition of affairs—(1) the National League for Physical Education and Improvement; (2) the National Service League; and (3) the Society for Housing of the Working Classes.—Owing to the lateness of the hour the discussion on Dr. Thomas's paper was deferred to the next meeting.

Reviews and Notices of Books.

Sanitary Laws of Scotland and Principles of Public Health.
By W. J. BROCK, D.Sc., M.B. Edin., F.R.S. Edin., &c.,
Medical Officer of Health of Midlothian, &c. London
and Edinburgh: Oliver and Boyd. Small 8vo, pp. 480.
Price 7s. 6d.

THIS little volume is handsomely bound in flexible red leather, gilt-edged, and well printed, though the type of all but 120 pages is so small as rather to strain the reader's eyes, in gas light especially, the paper being, in order to keep the volume in small bulk, so thin as to be a little too transparent—which means, after all, that we cannot have large type and thick paper combined with small bulk and full contents. The work includes, verbatim or in abstract, all the statutes relating to public health which apply to Scotland, even though they are not confined to that country—such as the Rivers Pollution Prevention Acts, the Factory Acts, the Sale of Food and Drugs Acts, and the Housing of the Working Classes Acts. Most are given only in abstract, the main exception naturally being Scotland's Magna Charta of public health, the Act of 1897. Following the Acts themselves there is in an appendix a reprint of official circulars and Orders relating to them, on the same lines as those of a little volume issued by the Scottish Local Government Board. In other appendices vital statistics, food, water, air, and ventilation are dealt with; in another a synopsis is given of the requirements of the Scottish Conjoint Colleges Examining Board for the diploma in public health and a syllabus of requirements for sanitary inspectors' certificates; and still another appendix gives a digest of decisions on the sanitary laws. The scheme of the book is therefore good and most of it has been well carried out.

In some respects, however, the work is open to criticism. Concerning preventive measures in infectious diseases, attention is quite properly given to the value of hospital isolation of scarlet fever and the author states that he will quote extracts from writers who have recently given their views on the subject. All the writers quoted, however, are those who can be ranked as doubting or denying the value of such isolation and not a word is quoted on the other side. Statistics for Edinburgh are given which are interesting and, so far as they go, support the view that hospital isolation is useful, which is evidently not what the author himself thinks, but he is quite right to doubt deductions from the figures of only a limited period. Regarding the Edinburgh figures, it would have been convenient had explanation been given of such facts as that in the year 1896 there were 2185 notified cases, of which 1703 were removed to hospital, while in 1897 the cases were 2597 and only 748 went to hospital, and of the still more remarkable fact that in 1904 the number of cases treated in hospital considerably exceeded the total number notified. Regarding disinfection, it is stated at p. 323 that corrosive sublimate solution (1 part to 1000 parts of water) should have added to it 10 per cent. of chloride of sodium, but on the next page it is more reasonably stated as 10 parts, not 10 per cent. In using the same solution for a disinfecting spray it is recommended that 10 per cent. of alcohol should be added. As to vaccination, the author does not appear to know that we in England have since 1897 had the compulsory age fixed at six months

as in his own country. Wakley, not Wakely, was a coroner for Middlesex, and Russell, not Russel, was member of the Local Government Board in Scotland. Virchow's researches relating to typhoid fever in Hamburg are spoken of but it is not said where a record of these researches is to be found. Here and there, indeed, the writing is a little careless. The book contains a great deal of useful information regarding vital statistics, air and ventilation, food, drinking water, and so on, and the digest of decisions on the sanitary laws will be found valuable. Also there is an excellent index.

Hygiene. By J. LANE NOTTER, M.A., M.D. Dub., Chairman of Council and Examiner to the Royal Sanitary Institute; Examiner in Public Health to the Universities of Cambridge, Manchester, and Liverpool; Honorary Member of the Hungarian Society of Public Health, &c.; and R. H. FIRTH, Lieutenant-Colonel, Royal Army Medical Corps; Professor of Hygiene in the Royal Army Medical College; Member of the Council and Examiner to the Royal Sanitary Institute. Sixth edition. London, New York, and Bombay: Longmans, Green, and Co. 1905. Pp. 491. Price 4s. 6d.

So to write a work of this nature as to adapt it to the requirements of both professional and non-professional readers is a more serious undertaking than appears at first sight or is generally believed. Setting aside the number and variety of scientific subjects which fall within its scope, it is no easy task to determine what to omit and what to include in order to give the general but appreciative reader sound, intelligent, and untechnical knowledge of the facts and principles underlying the many-sided subject of hygiene on the one hand, while maintaining its scientific character sufficiently to fit it to take its proper place in a series of scientific manuals intended for more advanced students, on the other hand. It is but natural in such circumstances for the reader to turn to the scientific acquirements and reputation of those undertaking it as evidence of their competence to do so and to the measure of success which has followed their attempt. In these respects there is no room for misgiving in the present case. The names and recognised position of the authors are a sufficient guarantee of their competence and the fact that this is the sixth edition of their work (the first was published in 1894) sufficiently proves the success of it. It is mainly with the general laws and principles of hygiene and with the reasons which have led up to the establishment of these rather than with the enumeration of a number of details that the authors have very properly concerned themselves. But such facts and details as have any direct bearing or are illustrative of any point under discussion have not by any means been ignored or neglected. It is surprising, indeed, what an amount of relevant and readable information is comprised in some 490 pages of which the volume consists. We have gone through these and in doing so had marked many of them for reference and comment but it is not easy, nor is there any need, to do this in the space at our disposal.

We have already said enough to indicate our opinion of the nature and the value of the book. The present edition has been partly re-written and otherwise added to and revised. We may especially direct the reader's attention to the sections devoted to air, water and its chemical analysis and bacteriological examination, the ultimate disposal of refuse and excreta (remarks on land treatment and biological methods), and to Chapter VII., on infection and disinfection. In this chapter the subject of infectious diseases and infection in connexion with the micro-organisms of modern bacteriological researches and the existing views regarding immunity to disease are well and succinctly set forth. It would be hopeless to attempt to keep pace altogether with the almost daily developments and advances in practical science, nor is it the object of a book of this kind to do so. But it is only right to add that the authors of

this manual, which contains many useful formulas and diagrams, seem to have spared no pains to bring it up to date and to make it a trustworthy and valuable guide for all and an excellent introduction in particular for those who intend to enter on a more extended course of study and work in this direction.

Handbook of Physiology for Students and Practitioners of Medicine. By AUSTIN FLINT, M.D., LL.D., Professor of Physiology in Cornell University Medical College. With 247 illustrations and 16 coloured plates on Histology. New York: The Macmillan Company. 1905. Pp. 877. Price 21s. net.

Dr. Flint's name is well known as the author of several books on physiology. He has taught the subject since 1858 and this work represents his teaching as given at present in the Cornell University Medical College. Candidly, we do not think that it will "hold the field" in this country against other better and well-known text-books. There is a kind of feeling on reading it that reminds us of the old practice—condemned on high authority as unsatisfactory—viz., putting new cloth on old garments. It contains a good deal of what used to be called "physiological anatomy," a large number of the illustrations being from Sappey and Hirschfeld. This the author regards as a necessity for his students. Descriptions and "illustrations of instruments and apparatus are omitted." Of the physiology of nerve and muscle there is but little. The *Atlas of Histology* consists of 16 plates in colour, some of which are taken from Subotta's *Atlas*; the others have been reproduced by the three-colour photographic process from actual specimens, and to these are added a few from Wilson's "*Atlas*."

To the account of the blood about 14 pages are given. There are no diagrams of its spectroscopic characters, while in the composition of blood plasma the carbonic dioxide is given as in solution. Moreover, peptones are said to exist in it to the amount of 4 per 1000. In dealing with the cause of cardiac rhythm one ganglion of the frog's heart is described as placed "between the left auricle and the right ventricle" (p. 45). We are told that reflex arrest of the heart can be produced by stimulation of the cervical sympathetic. There are no tracings of blood pressure, of respiratory movements, or muscle curves; indeed, the direct results of the graphic method have practically no representation. There are but two or three "curves" of any kind in the book and these are pulse tracings, including an obsolete one by Vierordt. At the present time it seems odd to produce a text-book on physiology and one illustrated by such a large number of figures, and yet that no space is found for blood-pressure tracings and other graphic records.

The salivary glands are described as of the racemose variety. We do not find an account of the fundamental experiments of Ludwig on the secretion of saliva. The products of gastric digestion are described in very general terms. Enterokinase can hardly be called "a true proteid ferment." As to the recent work on intestinal movements, it finds no place. Each chapter is introduced by a discourse on the physiological anatomy of the organ with which it deals, and this subject, it seems to us, is far too prominent, though it is possibly necessary for the students of Cornell College. No doubt it is helpful, but much space is taken up that might be devoted to physiology proper. The cranial nerves are fully illustrated and their functions described, about 50 pages being devoted to this subject, while their functions are also illustrated by references to clinical cases. About 20 pages suffice for the spinal cord. The diagrams given to show the motor and other cortical areas hardly correspond with our most recent knowledge on this subject. As to the sympathetic system, its treatment is more anatomical than physiological and we failed to find an account of the use of nicotine in connexion with

"cell stations." Here is a curious statement: "When the sympathetic filaments distributed to a gland are divided the supply of blood is much increased and an abundant flow of the secretion follows (Bernard)," (p. 613).

A rather long chapter is devoted to embryology and it is illustrated by a number of figures, anatomical and histological. As a whole the work seems to us to deal with physiology more on anatomical than true physiological lines. No doubt here and there reference is made to certain modern advances but other advances of equal importance are conspicuous by their absence.

As to the "*Atlas*," there is a note on the technique of photomicrography in colours by Dr. Leaming, stating how the results are obtained. The author states that he is "particularly fortunate in certain objects for reproduction." The section of the stomach showing peptic cells and acid cells he believes to be unique. We do not share his opinion if he means by unique—unique in its excellence.

A Text-book of Clinical Diagnosis by Laboratory Methods. By L. NAPOLEON BOSTON, M.D., Director of the Clinical Laboratories, Medico-Chirurgical College, Philadelphia. Second edition, with 330 illustrations. London and Philadelphia: W. B. Saunders and Co. 1905. Pp. 563. Price 18s. net.

In February last we reviewed the first edition of this work and our forecast as to its merits and usefulness has been fully justified, for the author was called upon to prepare a revision of his book eight months after its publication. Slight changes have been made and 17 pages of new matter have been added at the end covering the more important advances, or at least what are claimed as advances, such as Biff's new hemoglobinometer, Ficker's reaction on the clumping of dead typhoid bacilli, Ravold's combined heat and contact test for albumin, Cammidge's test for glycerine in the urine, and Cipollino's test (December, 1904) for hydrochloric acid in the gastric contents. Where there is a multitude of tests it rather points to the supposed unsatisfactory nature of the old standards. Most of the new advances require careful control. This, of course, can be done by the wide publicity given to them by such a work as the present. We have got reconciled to the use of the word "centrifuge," but now we are presented with "turfugation," a centrifugal method depending upon the revolution of a tube-containing bar upon a twisted cord, with which a speed of 5000 revolutions a minute may be obtained, and it is, of course, an easy stage to a "torkrit." In other respects the work is substantially unchanged. The print and illustrations are excellent. The work will prove a mine of reference for the busy practitioner and at the same time it will give him a broad view of the great strides which are being made almost daily in clinical diagnostic methods.

A Manual of Surgery for Students and Practitioners. By WILLIAM ROSE, M.B., B.S. Lond., F.R.C.S. Eng., Emeritus Professor of Surgery in King's College, London, and formerly Senior Surgeon to King's College Hospital; and ALBERT CARLESS, M.S. Lond., F.R.C.S. Eng., Professor of Surgery in King's College, and Surgeon to King's College Hospital, London; Examiner in Surgery to the Victoria University of Manchester, and to the Universities of Liverpool and Leeds. Sixth edition. London: Baillière, Tindall, and Cox. 1905. Pp. 1350. Price, cloth, 21s.; flexible leather, 25s. net.

WE have on many previous occasions spoken highly of this work and the appearance of this the sixth edition merely requires that we should mention the chief changes which have been made. Modern surgical technique has had a chapter devoted to it, several chapters have been rearranged, and a new chapter has been written on the surgical aspects of gynecology. The value of the x rays in diagnosis

and treatment has received due recognition. Much of the pathological portion of the book has been rewritten by Dr. W. D'Este Emery, clinical pathologist to King's College Hospital. The book now contains 200 more pages than were in the previous edition, though the adoption of an excellent, thin, but opaque page has made the volume less bulky than it was. We hope the authors will guard against the very natural tendency to enlarge a book at every edition. We commend this issue to the attention of the student as heartily as we commended previous editions.

LIBRARY TABLE.

A Study in Nursing. By Miss A. L. PRINGLE, formerly Matron of St. Thomas's Hospital. London: Macmillan and Company. 1905. Pp. 98. Price 1s. net.—This little book is not intended to teach nursing in detail. It is a retrospect of a nurse's work which will be a useful study for her juniors. Miss Pringle says that the lessons of many masters are so mingled in these pages with the teachings of experience that she cannot always distinguish the source of what she has written. At any rate the book contains much sound advice. The headings of the chapters indicate the scope of the little work; they are: 1. What is Nursing? And who should be Nurses. 2. A Glance at the Beginning of the Present System of Nursing. 3. Fields of Nursing. 4. Organisation of the Nursing Staff in a Large Hospital: The Matron's Duties. 5. The Hospital Staff: Ward Sisters and Nurses. 6. The Night Service. 7. The Domestic Staff. 8. The Probationer's Training. 9. The Patient's Bed: The Linen Store. 10. A Study of a Nursing Staff in a Poor-Law Infirmary. Miss Pringle quotes Dr. Worcester's definition of nursing; it is one worthy of remembrance. He says: "The profession of nursing like that of medicine is an art dependent on science; but in nursing, important as is the underlying science, the art must always predominate." The tone throughout the book is excellent. The ideal person to make a good nurse is shadowed forth in the following paragraph: "The ministering angel must have her wings tied under a big apron! The least reflection shows that there must be labour and drudgery in the task of nursing; that it involves some offices that are strongly disagreeable and some of a delicate nature; and that there will be exercises for a fine intelligence and deft hands. We must start with the sincere desire to serve and the resolution to bear what is trying so quietly and cheerfully that our sick shall not know what it costs us. We shall need that true refinement which treats delicate matters simply and delicately. Sympathy and good sense must go together in their observations and actions, and the cool, soft hand must be at once tender, firm, and skilful." No nurse can read this little book without finding much to charm and to cheer her, or without improving her knowledge.

With the Abyssinians in Somaliland. By Major J. WILLES JENNINGS, D.S.O., R.A.M.C., P.M.O. of the Force, and CHRISTOPHER ADDISON, M.D. Lond., F.R.C.S. Eng., Lecturer on Anatomy, Charing Cross Hospital Medical School, who arranged the matter for publication. With a Preface by Colonel A. N. ROCKFORD, C.B., C.M.G., R.A. London: Hodder and Stoughton. 1905. Pp. 265.—This volume embodies a diary kept by Major Jennings during the expedition against the Mullah in which the Emperor Menelik undertook to assist by operations in Abyssinian Somaliland. Colonel Rockford was associated with the Emperor's troops and on this occasion was provided with a small staff. The Emperor requested the services of two British medical officers. Major Jennings was selected as the senior. The operations in the field are well described and the information which he has collected concerning the customs, religions, characteristics and folk-lore of the Abyssinians will interest

the general reader. Major Jennings, who had served for some years in the Egyptian Army, sailed from England in October, 1903, and returned to London on April 28th following. In writing of medical matters among the Abyssinians, he draws attention to the prevalence of leprosy and to the enormous number of persons who suffer from a cestode parasite which inhabits the intestinal tract and which, he says, is no doubt chiefly introduced in the half-cooked or raw beef that is so much eaten. Rheumatism, minor intestinal disorders, inflammation of the eyes and of the outer ear passages, and hysteria in women are common disorders. Dysentery is extremely rare and malaria is scarcely known in the highlands, though it prevails in the low countries. There are no general medical practitioners in Abyssinia. Each physician is a specialist but the list of his remedies is but a small one. The book is very suitably illustrated with 65 pictures from photographs taken by Major Jennings and by a map of the route which he traversed. The volume is very good reading and the portions given up to reminiscences of big game shooting and other forms of sport are attractive. The medical aspect of the book is a comparatively small one but the whole work is of considerable interest.

Landmarks and Surface Markings of the Human Body. By LOUIS BATHE RAWLING, M.B., B.C. Cantab., F.R.C.S. Eng., Assistant Surgeon, Senior Demonstrator of Anatomy, and Demonstrator of Practical Surgery at St. Bartholomew's Hospital; late Assistant Surgeon to the German Hospital, Dalston; late Hunterian Professor, Royal College of Surgeons of England, &c. With 31 illustrations. Second edition. London: H. K. Lewis. 1905. Pp. 96. Price 5s. net.—We congratulate the author on the appearance of a second edition of this work within 12 months. Opportunity has been taken of making numerous alterations and additions in the text and the illustrations have been revised and some new ones added. The surface markings of the cerebrum and lateral sinus, which we had occasion to criticise in the former edition, are now given with greater accuracy, and we notice also that Fig. 18 has been modified to show more clearly the position of the colon. The book is certainly improved in many ways and forms a concise and lucid guide to the subject of which it treats.

Whitaker's Almanack for 1906. By JOSEPH WHITAKER, F.S.A. Pp. 792. Price 2s. 6d. net. *Whitaker's Peerage for 1906.* Pp. 724. London: J. Whitaker and Sons.—The thirty eighth issue of that incomparable work, Whitaker's Almanack, reminds us of the remark which Cromwell wrote in his Bible: "Qui cessat esse melior, cessat esse bonus," for we think that it is better than ever. Not but that we miss some of the articles which have been eliminated in order to make room for others, still that is merely personal predilection. There is hardly any subject upon which the average man can desire information which he will not find treated of in the work under review, although the recent changes in the Ministry are of course not included for the very good reason that the Almanack was published in the month of November. But "Whitaker" continues to be a book which everyone must have at hand. "Whitaker's Peerage," which is also a Baronetage, Knightage, and "Companionage," is singularly compact and is full of useful information. In addition to the body of the book the introductions deal with various points concerning the Sovereign, the Regalia, the Peerage and its degrees, peers outside the House of Peers, and the vexed question as to whether or not a bishop is always to be called the Lord Bishop. The book is an admirable complement to the Almanack.

Hazell's Annual for 1906. London: Hazell, Watson, and Viney. Pp. 640. Price 3s. 6d. net.—"Hazell's Annual" differs from other books of reference which appear at the close of a year in that it is in great part retrospective, while

others are prospective. That is to say that it deals mainly with the events of the year previous to that of which the date is given on the current issue. It is certainly one of the most useful books of reference, especially for the journalist, which we know and has one markedly valuable feature in that the articles upon such thorny subjects as the fiscal question are written quite impartially. This year's issue gives the text verbatim of such important international events as the Anglo-Japanese Treaty and the Russo-Japanese Peace Treaty. There is besides an infinity of information upon the men and matters of the day.

Who's Who, 1906. Pp. 1878. Price 7s. 6d. net. *Who's Who Year Book, 1906.* Pp. 132. Price 1s. net. London: A. and O. Black.—These two works of reference were formerly issued as one volume, but the increasing size of "Who's Who" (the current issue is 62 pages larger than the issue for 1905) necessitated their separation. "Who's Who" reminds the reader forcibly of the saying of the Apostle that "one star differeth from another star in glory" and also of the astronomical fact that the number of stars of below the first and second magnitudes is considerably greater than of those contained in the two higher magnitudes. But this is what makes the book in question so useful, for here we find information about a number of persons who, but for its friendly pages, might have blushed unseen for all time and yet persons about whom information is often wanted. We ourselves owe the work a debt of gratitude, for we are constantly referring to it. The Year Book contains lists of Government officials, clubs, editors, newspapers, and magazines, and of many other persons and things. We are glad to see that the list of medical specialists which was included last year has this year been eliminated. Altogether the two books form a valuable adjunct to the reference library.

The City Diary. 1906. City Press Office, London. Price 1s., by post 1s. 3d.—This is not only a useful diary but a handy work of reference upon many matters connected especially with the City of London. The diary for 1906 is the forty-third annual edition. It is well bound and interleaved with blotting paper.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

PHYTIN.

(THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE, SWITZERLAND; LONDON AGENCY, 27A, ST. MARK AT HILL, E.C.)

PHYTIN is described as the phosphorus reserve material of green plants, containing the phosphorus in organic combination. It appears to be, in fact, a compound of calcium and magnesium phosphate with oxymethylene diphosphoric acid. According to our analysis it contains at least 50 per cent. of phosphorus calculated as phosphoric acid, P_2O_5 . It contains no proteid or any appreciable amount of nitrogen in any form. It thus differs from nuclein or lecithin. On heating phytin a slight charring is observed and the ash consists of the phosphates of magnesium and lime. The ash so obtained amounts to 65 per cent. and the moisture amounts to 8 per cent. Phytin is a gritty white powder partially soluble in cold water but completely so when the water is acidulated. The cold aqueous solution gives a curdy precipitate on heating. It is stated that this peculiar form of phosphorus compound insures the assimilation of the phosphorus and hence it is regarded as of some therapeutic value in cases of imperfect metabolism or of general malnutrition.

"TABLOID" RHUBARB EXTRACT.

(MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

Rhubarb is well known as a bitter stomachic and purgative but some importance attaches to the way in which the extract is prepared, owing to the griping tendency of certain principles. The extract of rhubarb contained in the two-grain "tabloid" is prepared by a special process. The convenience of this special administrative form of the drug, particularly for the use of children, need hardly be pointed out.

"ANTHRASOL" SOAPS.

(EDWARD COOK AND CO., SOAP WORKS, BOW, LONDON, E.)

We have no fault to find with these soaps; they are evidently prepared with great care, having regard to the purity of the soap basis and the requirements of delicate skins. The alkali and the fats are well balanced and the soaps further contain "anthrasol," which is described as a purified, pale-yellow, limpid tar from which the pitch and colouring matter have been removed, the phenolic constituents and neutral hydrocarbons of tar only remaining. Apart from its powerful antiseptic properties, anthrasol is marked by its penetrating action into the skin. We have examined four varieties of anthrasol soap—namely, toilet soap, oat-meal toilet soap, sulphur toilet and medicinal soap, and an unscented medicinal soap containing 5 per cent. of anthrasol.

HEMOGLOBIN CAPSULES.

(JULES DENOVAL AND CO., CARLTON WORKS, NEW CROSS-ROAD, LONDON, S.E.)

It is sufficient to be able to say of these capsules that they contain perfectly pure unaltered hæmoglobin. We had the opportunity of examining the hæmoglobin used for the purpose and we found that its solution in cold water gave the characteristic absorption spectrum of hæmoglobin and on boiling the solution coagulation of the albuminous constituents took place. The hæmoglobin contained just under $\frac{1}{2}$ per cent. of iron which, of course, is the normal physiological proportion.

WYCHIA WATER.

(THE WYCHIA CO., DROITWICH.)

Wychia water is described as the natural isotonic product of Droitwich brine and its composition is based upon certain physico-chemical factors concerned in the normal physiological processes taking place in the intestine. Our analysis of the water gave the following results in regard to its chief constituents per litre: common salt, 11.93 grammes; and sodium sulphate, 7.84 grammes. Beside these constituents there are present also small quantities of other natural salts, while it should be mentioned that Droitwich brine is distinctly radio-active and, in fact, gives off a gas which would appear to be the radium emanation. The water is in reality a solution of salines which are present in such proportion as to cause an increase of the true secretion from the mucous membrane of the intestine in contradistinction to the excess of fluid produced there by osmosis or irritating substances. Wychia water, therefore, in acting as a laxative, does so purely physiologically and not mechanically. In doses of from four to eight ounces two or three times a day the water has proved to be of service in habitual constipation, in relieving plethora, and in increasing the secretion of urine and eliminating uric acid. It is an efficient though not drastic saline aperient.

OZONE PAPER.

(R. HUGGINS AND CO., 199, STRAND, LONDON, W.C.)

The ozone paper consists of a bibulous paper saturated with a well-known deflagrating salt. On lighting the paper fumes are abundantly evolved which consist in reality of very finely divided particles of potassium chloride which when inhaled give some relief in certain respiratory disorders, as in asthma. The papers are very well prepared and answer uniformly. The use of the term "ozone" is open to criticism.

THE LANCET.

LONDON: SATURDAY, JANUARY 6, 1906.

Our Readers and Ourselves.

WE wish all our readers a Happy New Year. Not so long ago it was our custom in the opening number of each year to review that which had been done directly by THE LANCET for the benefit and advancement of the medical profession during the 12 months passed and at the same time to indicate in what particular direction, and by the help of whose well-informed pens, we proposed to carry on our endeavours during the year to come. The proceeding was perhaps egotistical but it had its advantages. It showed that we were ready to rely upon our readers for information as to their needs and it helped us to receive from them highly valuable criticism both as to what we had carried through in the near past and as to what we proposed to do in the immediate future. Perhaps our discontinuance of this annual insistence upon the close relation between ourselves and our readers has not been as much due to our increasing modesty as to our feeling, which ineluctably has grown stronger year by year, that our desire to serve the medical profession needs no protesting. We can appeal to a record of over 80 years, during which our single aim has been to advance the scientific and material position of our calling, as both a proof that we have deserved the confidence so freely bestowed upon us and an argument that we are likely to continue to deserve it. We are not, therefore, proposing to revert to the publishing of any general programme of intended effort or any general summary of bygone accomplishment. But we think that we may without undue *amour propre* point to two instances where our action has had unquestionable result, as a guarantee that the trust which has been for so long reposed in us will always be met by personal and active endeavour on our side.

Any service which we have been able to render to the Metropolitan Hospital Sunday Fund has always been a source of especial gratification to us. The hospitals of the greatest city of the world have for the most part had to fight hard for their existence ever since they were instituted, remembering always that for them mere existence does not suffice but must be accompanied by growth and by ever-developing usefulness. "Hospital Sunday" was, as is well known, first instituted with marked success at Birmingham, an example soon followed in other large provincial towns but not at once in London. From 1869 to 1873 THE LANCET was constant and earnest in urging the desirability of promoting a Hospital Sunday Fund for the metropolis and in the course of these years numerous and weighty articles on the subject were published in its columns, as well as a large number of letters—notably some from Mr. F. W. LOWNDES of Liverpool. As a

result of this and of other persistent and disinterested advocacy, in 1873 the Metropolitan Hospital Sunday Fund was organised to aid in the collection of the annual income indispensable to the maintenance of the London hospitals, and the Fund once started has contributed ever since an important proportion of their resources. In advocating the claims of such a Fund as this public advertisement of an intelligent character and of the widest kind is necessary in order that the needs of the institutions on behalf of which assistance is asked may be placed effectively before all who may be able to give. The pulpits of the various places of worship in the metropolitan area, and beyond it, offer a valuable means whereby the congregations assembled may be informed of what is expected of them; and THE LANCET for nearly 20 years has rendered what we trust has been practical assistance to the efforts of the preacher. That is to say, the proprietors of THE LANCET have caused to be printed at their own expense, annually (with one exception) ever since 1886, a Special Supplement in support of the Metropolitan Hospital Sunday Fund. This has contained not only the statistics of the Fund as published by the authorities of the Fund itself, but the results of independent detailed statistics of every kind from the secretaries of the hospitals in reply to our inquiries, and an exposition of the needs of the London hospitals, backed by such arguments and such additional information as from time to time have seemed most likely to prove persuasive. Our Special Supplements have been gratuitously distributed broadcast through churches, chapels, and synagogues in ever-increasing numbers; no less than 125,000 copies were printed and published in last June. They have, as we have reason to believe, proved instructive not only to worshippers and to those unable to attend Divine service but have also been of use to the preachers. They have advocated the cause of the hospitals as the great voluntary charities of London and have in particular urged that as charities pure and simple, without subsidy from State or municipality, their usefulness will best be continued and extended. Consistently with this view these supplements to THE LANCET have been themselves the gift of the proprietors of THE LANCET, no effort being made to recover the expenditure upon them by the inclusion of advertisements or by any other means. That the Metropolitan Hospital Sunday Fund, and other great funds and agencies competing in the same good work, may be able to keep up their figures and even to increase them is our most earnest wish and we are gratified to think that THE LANCET has been able to render assistance. The actual value of the work done may perhaps best be judged from the most recent statistics published in the "Classified Directory to the Metropolitan Charities" for 1906,¹ edited by Mr. F. W. HOWE. From these it is clear that at the present time the Metropolitan Hospital Sunday Fund and King Edward's Hospital Fund together furnish a full tenth part of the total yearly revenues of the charities to which they contribute.

The second subject to which we desire to draw the attention of our readers is the work of THE LANCET Relief Fund, and we do this so that they may assist any unlucky members of the medical profession to make application for help

¹ Longmans, Green, and Co.

under its scheme. THE LANCET Relief Fund is provided by the proprietors of THE LANCET for the affording of pecuniary help to registered medical practitioners or to their widows and orphans in cases of distress and emergency. The Fund has now been in existence for 17 years, so that a sum of money exceeding £5000 has been placed during that period in the hands of the Almoners for distribution. 450 cases have been relieved since its foundation. The scope of the Fund is now, we trust, well known to those who have read the reports which we have published at the beginning of each year, and to those who have sought assistance on their own behalf or in the interest of others.* It does not pretend to alleviate chronic distress, leaving this to be dealt with by organisations intended for that purpose, but it does aim at affording immediate help which, though in a sense temporary, is likely to be of permanent benefit to its recipient. Thus a man may help a lame friend over a stile when there is a reasonable prospect that he will be able to make his way in safety over level ground lying beyond the obstacle, whereas merely to place such a one in a position of temporary safety whence he will flounder into deep mire beyond will do him no lasting good and may land him in worse trouble than before. In bestowing assistance in emergency promptitude is of essential importance, and in the reports of the Almoners which are issued annually cases may be noted in which the donation sought was given within a few hours of the request being made. The Fund is now entering upon its eighteenth year, and it seems not unlikely that in 1906 its aid will be invoked at least as often and as urgently as heretofore. The distress prevalent through want of employment must necessarily affect very seriously many whose practices lie in centres where the working classes reside. Such practices also are, as a rule, those in which the medical man is least able to lay by provision against the sudden contingencies which he or his family may be called upon to face, and it is our earnest hope that the Fund may here be used in such a way as successfully to stave off unexpected and unmerited misfortune. We desire to express our appreciation of the services so willingly and so kindly rendered to the Fund as Almoners by many successive Presidents respectively of the Royal College of Physicians of London, of the Royal College of Surgeons of England, and of the General Medical Council, and by Sir HENRY PITMAN who has been the honorary auditor of the Fund from its commencement.

The Payment of Fees under the Midwives Act to Medical Men.

AS we anticipated when the Midwives Act became law considerable difficulty is being experienced in its practical working owing to the fact that no provision has been made for the payment of the fees of the medical men who may be called in under its provisions to the assistance of the attending midwife. One of the rules framed by the Central Midwives Board in accordance with the Act lays down that in certain conditions of special danger or difficulty the midwife must decline to attend alone and must advise that a registered medical practitioner be called in. As a result of

this rule cases are constantly occurring in which a medical man is called to see a patient under the care of a midwife and after perhaps the performance of some difficult and complicated obstetrical operation finds that the patient is too poor to pay him any fee. The excuse usually made is that the friends had not intended to call in a medical man and that they are unable to afford such attendance. At the present time there is no obvious way out of this difficulty. The Local Government Board has been appealed to for instruction and advice but it can only suggest that the local board of guardians might pay for the assistance required. Unfortunately, the boards of guardians do not all see their way to accept such advice and while some have consented to pay the fees of the medical men who may be called in, others have refused and have suggested that the services of the district medical officer should be obtained. It is doubtful, indeed, if the boards of guardians have the legal right to make such payments and, if they do, whether such payments will not result in the disenfranchisement of the husband of the patient. We believe, however, that such disenfranchisement would only be operative in the case of the elections to the board of guardians. Many of these patients, too, although not able to pay an adequate fee to the medical man, are not paupers and it would be wrong to treat them as such.

The matter is one of great difficulty and its only solution would seem to lie in the introduction into Parliament of a short amending Act authorising the local supervising authority to make payments to the medical men called in by midwives' advice under the Act on a scale to be agreed upon and sanctioned by the Local Government Board. If the Act is to work successfully there must be no difficulty on the part of the midwives in obtaining medical assistance when they require it, and it is of the utmost importance in the interests of the patients themselves that such assistance should be forthcoming without any undue delay. The framers of the Act apparently did not see their way to make any arrangement for the payment of these fees and rather than run the chance of wrecking the Bill they omitted all mention of payments to the medical men who might be summoned to assist the midwife, no doubt relying upon the proverbial generosity and charity of the profession. It is, however, neither logical nor just if the law practically compels the midwife to send for a medical man in certain conditions that the assistance rendered should not be adequately rewarded. There appears to be a good deal of misconception in the minds of some medical men as to who it is that really summons them in these cases. The fact that the midwife in advising that a medical man should be summoned has to fill up and to send to him a note on a prescribed form stating the reasons why she is sending for assistance seems to have led some practitioners to think that the call is an official one, emanating from the midwife, and that the local supervising authority will therefore be responsible for their fee. This is by no means the case; the medical man is summoned by the person whom the midwife has advised to send for medical assistance and therefore legally this person is responsible for the payment of the fee and there is no power at the present time to make anyone else or any local

* The usual forms of application will be published with our next issue.

supervising authority responsible for such payments. In the present conditions of things there has naturally enough been some reluctance on the part of medical men to attend such summonses and the midwives committee in Manchester has brought forward a proposal that one or two medical practitioners should be appointed in each district of the city who might be called upon to render assistance to midwives under the provisions of the Act. Such an arrangement we are sure would not work satisfactorily. The only right and proper way is for every medical man's name to be placed upon such a list unless he is unwilling to allow this to be done and instructions should be given to the midwives to send for the patient's usual medical attendant or to consult her wishes as to whom she should send for in cases where the patient has no medical attendant, whilst in cases of grave emergency the nearest medical man would, of course, be sent for. The passage through Parliament of an amending Act is, however, a matter for the future and in the meantime some arrangement must be made so that the working of the existing Act may not be impeded.

As the Local Government Board has suggested that the boards of guardians might make these payments no doubt in these circumstances such a use of the funds at their disposal would not be disallowed by the Government auditors. A further possibility is that in many cases the guardians or the local supervising authority might recover the payments from the patients' relatives, or they might advance the sum as a loan to be repaid within a certain time. There would still remain a large number of cases in which the fees could not be recovered from the patients and then the money would have to come out of the local funds. All these possible solutions of the difficulty will have to be considered when the time comes for drafting an amending Act and no doubt a plan could be adopted by which the local supervising authority—that is to say, the borough councils or the county councils—would be empowered to make such payments out of the funds over which they have control. If the profession will only unite in impressing the necessity for such an amending Act on their local Members of Parliament and on the members of the local county councils we have no doubt that an arrangement can be arrived at which will be fair to all parties and which will safeguard not only the interests of the patient when the necessity arises for her obtaining medical assistance but also those of the medical man who may be summoned to attend her.

Medical Men in Parliament.

THE near approach of a general election will necessarily turn the thoughts of many people towards ideal conceptions of the constitution of the House of Commons; conceptions in which all the great interests of the kingdom and all the varied forms of knowledge capable of being brought to bear upon the promotion of the national welfare would be proportionately and adequately represented. In an assembly so constituted it is manifest that medicine should hold a prominent place; first, by reason of its many forms of utility to the State; and secondly, by reason of the number and social position of those by whom it is practised.

The claims of the profession to increased representation will, we have no doubt, be strongly pressed by a certain number of medical practitioners, as they have been upon previous occasions of a similar kind; and, within certain limits, we have all possible sympathy with this attitude. Attention is again being called, as it has been called aforetime, to the number of lawyers among the Parliamentary candidates, to the protection which their presence in the House will afford to the legal profession, to the absence of any corresponding number of medical men, and to the slender prospect of any satisfactory medical legislation. Unfortunately—or perhaps fortunately—English institutions are seldom constructed upon any ideal basis and, as a rule, they have roughly shaped themselves into some sort of harmony with time and circumstance. The House of Commons, nominally a deliberative assembly, has been gradually converted into a party machine; and there is but little room in it for Members whose places in that machine cannot be at once specified and defined. The fulfilment of this condition implies a readiness to sacrifice individual knowledge or individual convictions at the altar of party; and therefore, of course, to sacrifice at the same time any advantages to the nation which the knowledge or the convictions might be calculated to secure. Good illustrations of this position have been furnished from time to time by the public health legislation of the country, and there is always fear lest the Government in power should consider it expedient to surrender the real and permanent interests of the country in order that the delinquents who may be their supporters may be spared inconvenience or offence. The party politician has to be “cocksure” that he is quite right and that his opponents are quite wrong; and in upholding this position it is necessary for him to be not only impervious to argument, but also, sometimes, indifferent to truth. It cannot be said that either the intellectual or the moral standards of politics are lofty ones; and it is certain that they are of a kind but slenderly compatible with either the study or the practice of science. The medical man who enters the political arena must often be called upon to throw overboard a good deal of his accustomed intellectual ballast and to depart, in many particulars, from his accustomed principles of action. Failing to adopt this course, even if he succeeds in reaching the House, he will find himself but a floating particle between contending factions, powerless to help or to hinder either; and, adopting it, he will be under the necessity of abandoning his most cherished convictions whenever they are out of harmony with the momentary requirements of his associates.

An essential and fundamental difference between the legal and the medical professions in relation to Parliament arises from the fact that to the lawyer a seat in the House of Commons is a recognised means to an end, an ordinary step in a professional career, while to the medical man, as a rule, it can be no more than an end in itself. The legal offices in the gift of the Government are numerous, important, and well paid, and they are regarded either as the lawful prizes of political adherents or as sopas by which opponents may be silenced or removed. The medical offices are less numerous, are but slenderly remunerated, and usually require either early training or special competence. A young lawyer who is a Parliamentary candidate

has usually no difficulty in selecting a party, and he often waits to test his powers in the House before he decides whether his best policy will be to become a nuisance to the Government, to be bought off with a small appointment, or a supporter, in the hope of ultimately winning one of the great prizes of his profession. In either case he has no difficulty in giving utterance to all the party watchwords upon the hustings, or in obtaining, if he be a man of sufficient promise, the active assistance of the party organisation in procuring his return. Cabinet Ministers, who had never before heard of his existence, will write him letters expressing their conviction that the welfare of the country depends upon his success; and he will for the moment be the embodied representative, it may be of "peace, retrenchment, and reform," it may be of tariff revision, it may be of British dominion over the seas, it may be of the necessity of a living wage for the officers of the army. A medical candidate would, as a rule, be less skilful in his suppression of the fact that there are two sides to every question; and hence he is likely, in the great majority of constituencies, to be rejected as a Laodicean by both parties. He will tend to dwell upon the needfulness of submission to the teachings of science; and, where science has spoken plainly, upon the vanity of the attempts at compromise which are so dear to the heart of the politician. Unless supported by strong local or family influences he has usually but slender prospect of success; and, if so supported, he has probably been guided by circumstances into other channels of activity—i.e., he is no longer a typical medical candidate. Except in the cases of the representatives of the University of London and of two of the Northern Universities the medical Members of the outgoing House of Commons have probably been indebted for their seats to influences more or less remote from their profession.

As a general rule, moreover, with possible exceptions in the cases of a few London specialists, a seat in the House of Commons is incompatible with the demands of medical practice. When the courts rise the lawyers are set free, but the physician and the surgeon are never released from duties to which the most urgent calls of the party whips would have to be rendered subordinate. Even in the cases of the specialists an all-night sitting would be a poor preparation for the duties of the following day. On all these accounts we cannot but feel that the prospect of any material increase in the number of medical Members of Parliament is not one that can be confidently entertained; and, admitting to the fullest extent how useful such Members might be under different conditions, we do not think, under those which actually exist, that their probable absence is greatly to be deplored. Suppose there were 20 medical Members, what good result, so far as the profession itself is concerned, could reasonably be expected from their presence? If they belonged to the party in power they would have been returned under pledges to give a general support to its leaders, and they could not violate these pledges in order to exert pressure in favour, say, of a measure of medical reform or of medical protection. If they belonged to the Opposition their opportunities of action would be still more restricted. If, as

would almost inevitably happen, they were divided between different sides of the House, their powerlessness would be complete; and the very worst thing that could happen to the profession, in the estimation of the public, would be that it was represented in Parliament by a few Members who desired to subordinate wider interests to professional demands. We do not wish to appear unduly optimistic, but we think, in all the circumstances of the case, that matters are best as they are. Times have somewhat changed during the last half century: individual effort counts for less and less in succeeding Governments and party calls become more exacting. When THOMAS WAKLEY, the Founder of *THE LANCET*, was able to force medical affairs upon the attention of Parliament, and to do so with successful results, he was himself a prominent Member, but he was sitting in an assembly where time was found for the expression of individual opinion. Such chances no longer occur. Amongst its Members the House of Commons has generally included medical men who were also men of light and leading, possessing the ear of the House by virtue of known learning and of proved ability, and whose speeches on questions presenting medical aspects have always carried considerable weight. There is no particular reason to suppose that the next Parliament will be less fortunate, or that the present medical Members, if from any cause they should be displaced, will not be followed by successors of similar calibre. But no great outcome can be expected of their efforts in behalf of medicine. They can only enlighten other Members and so do good work indirectly.

Annotations.

"No quid nimis."

THE NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.

THIS league, which as we mentioned in *THE LANCET* of July 15th, 1905, p. 170, was brought formally before the public at a meeting at the Mansion House on June 28th, has since been making steady progress and is now legally incorporated. The first meeting of the council since its incorporation was held at Denison House, Vauxhall Bridge-road, on Dec. 28th, 1905, under the presidency of the Bishop of Ripon who is chairman of the council, the business being chiefly of a formal character preparatory to the actual work of the league. The league has just received the generous gift of £250 which was bequeathed to it by the late Mr. E. M. Denny who was much interested in its objects and whose wishes in regard to this gift have been carried out by his sons. The objects of the league are more especially (1) to save the babies; (2) to help the children; and (3) to train the youth, although it is intended also to teach parents, to improve dwellings, and to lessen drunkenness. The league is not intended to take the place of any agencies already existing for the physical welfare of the people but to bring them into relation with each other, to help them to coöperate, and to establish agencies where none exist at present. To describe in detail how it is intended to obtain these objects would occupy too much space but we may say shortly that the intention is to bring into relationship those who are already working at different methods of lessening infant mortality, whether it be by feeding the mothers, by the supply of pure milk,

by personal visitation of homes, by provision of crèches, or by offering premiums to babies on the first anniversaries of their birthdays. By this means it is hoped to find out the best methods and then to extend them to other places where no such methods exist. In the same way the league intends to obtain coöperation between the various societies and individuals who are interested in the medical inspection of children in schools, the best forms of physical exercise, the hours of sleep, the provision of playgrounds, the establishment of boys' brigades, of holiday schools, of schools for cookery, feeding of children, and everything that tends to help the children or to train the youth. In the pursuit of all these objects, as well as in teaching parents, improving accommodation, and increasing sobriety, the league hopes to have the aid of all sorts and conditions of men, women, and children. But its chief dependence will be upon medical men, teachers, clergymen, benevolent corporations and individuals, and last, but not least, on the personal aid of women who will devote their time and energies to the help of feeble mothers and perishing infants. We feel sure that such an enterprise will not lack that support from medical men throughout the country which it well deserves. Any information which they may desire regarding it may be obtained on application to the Secretary, 49-50, Denison House, Vauxhall Bridge-road, London.

THE HOURS OF SLEEP AT PUBLIC SCHOOLS.

It will be remembered that in THE LANCET of July 15th, 1905, we published a paper by Dr. T. D. Acland containing the results of an inquiry into the Hours of Sleep at Public Schools and in a leading article in the same issue we expressed our opinion that at present we err on the side of a deficient allowance of sleep. In the Times of Dec. 20th a letter appeared signed by 15 medical men every one of whom could speak with authority upon the same subject. This letter has produced some singularly interesting correspondence in reply from both parents and schoolmasters. One of these, signed T. E. Page, is so amazing in its argument that it deserves special comment. Mr. Page is a master at Charterhouse and is a brilliant scholar but his views upon the duties of an *informer querorum* are remarkable. He says: "The one patent fact in public school training at the present time is that too much attention is paid to the body and too little to the mind." He goes on to say that schoolmasters can be justly accused of rearing mental dwarfs, and for this, "next to our own incapacity, medical men are chiefly to blame." Further, "men who ought chiefly to be teachers are so fretted and harassed about questions of physical well-being that they are driven to neglect their proper work." He agrees with the signatories of the letter from medical men to which we have referred above that want of sleep is a definite factor in the causation of intellectual inefficiency but he also considers that there are other factors a hundred-fold more important. To advise headmasters to see that boys have more sleep "is after all but a quack remedy. Headmasters and all masters already give their 'serious attention' far too largely to such poor subjects." The opinions here expressed receive a deserved snubbing in a letter in the Times of Dec. 27th from another public schoolmaster, Mr. R. F. Cholmeley of St. Paul's School. This writer points out that the question of how much sleep boys should have is surely not one to which a house master can be indifferent and that the question of how to secure it to them is not outside his practice. If questions of physical well-being harass him so that he cannot teach, "is it so certain that he ought chiefly to be a teacher?" Mr. Cholmeley concludes by saying that he hopes that one day the discovery may be made "that the proper work of a house master may be a good deal more than can be

managed in the spare time of a hard-worked teacher." We need not labour these points, but as members of that profession which apparently acts the part of the Erinyes to Mr. Page's Orestes we wish to impress upon him that a boy who does not get enough sleep will never be able to profit by instruction upon the mysteries of the enclitic $\gamma\epsilon$ or even upon more important matters. Mr. Cholmeley, we think, has put his finger upon the weak spot in modern school polity, for in many ways it would be very desirable that the duties of house master and teacher should be separate. In former days this was the custom and relics of it remained up to some 30 years ago at Eton where there were at least two "dames" who did no teaching whatever but simply acted as housekeepers. The organisation of a house containing some 30 boys is no slight task and it is too much to ask that one man should be responsible for feeding, hygiene, and other matters of domestic polity and at the same time teach both in school and out of school, and look over copies of verse and prose, and direct his pupils in their studies. But that no boy should have less than nine hours of undisturbed sleep out of the 24 should be laid down as a canon.

THE CONGRESS OF CAPITALS.

THE somewhat adventurous proposal made by Sir Edwin Cornwall will, of course, meet with the verbal approval which generally greets suggestions that are right in principle. Nobody can deny that if representatives of the capitals of the civilised world could meet periodically and compare notes in regard to the technical work on which they are engaged mutual instruction of a useful character would be imparted. The greater portion of these technicalities would relate to matters that affect public health, either directly or indirectly. Therefore we have every reason to support the proposed Congress of Capitals and to wish it every success. It is just because we do desire that the project should be realised that we must not ignore the difficulties which have to be overcome. The complexity of the political situations in the various countries undoubtedly constitutes a great obstacle. It is true that even the London County Council is political, the Progressives being generally taken to be Liberals and the Moderates to be Conservatives; but that is a mere trifle when compared to the party divisions on the continent. Then there are municipal councils that are elected by the citizens which they govern and others that are not elected but are imposed upon the people by more or less autocratic Governments. All these disparate and antagonistic elements will require very diplomatic and skilful handling if anything like harmony is to prevail. On the other hand, if such obstacles can be overcome this will redound greatly to the honour of the object or cause capable of effecting union where there prevail so many opposing interests. Indeed, one of the good results of the visit of the Paris municipal councillors to London a short time ago was that the harmony between Paris and London overcame for the time being the causes of quarrels prevailing in Paris and in London. Such appeasement, even if only momentary, must facilitate the work of administration. For instance, a project is brought forward, say a scheme for drainage, and we may mention as a case in point the sewers of Marseilles. This scheme was promoted a few years ago by the Right and Centre of the Marseilles municipal council. Thereupon the Extreme Left from political motives made a point of opposing the scheme. But none of these councillors had any personal experience in drainage; they had never lived in towns that are drained. If, however, they had all visited London, which is drained in a manner somewhat similar to that which was proposed for Marseilles, surely, in face of the *fait accompli*, the Marseilles municipal councillors would have found it much

easier to form an opinion on the merits of the scheme. By means of international congresses municipal councillors will often see in other countries that schemes about which at home they are only quarrelling have already been realised and are in working order. This should facilitate the wider adoption of such schemes and thus bring about needed improvements more rapidly. That the Congress of Capitals will be political in the sense that it will help to promote peace between nations is universally admitted. To this extent politics will be allowed and welcomed. Will the desire to achieve progress in practical matters of municipal administration be strong enough to exclude other political questions about which no such unanimity of opinion exists? Then many municipal questions are also political questions, such as education, the control of the police, sanitary and factory laws, municipal enterprise, and the expropriation of owners of insanitary areas. All these and many other questions go to the very root of the great economical and political problems of the day. Thus, while we are most desirous to see the best possible technical work done and technical problems discussed and decided on their technical merits quite apart from politics, and especially party politics, still there is no disguising the immense difficulties in the way of any such pacific achievement. Perhaps the chief merit of Sir Edwin Cornwall's proposal is that at an international congress the municipal councillors will exercise greater control over themselves. Under such restraint they might then debate on its own merits a question which at home could not be broached without causing a party fight of so fierce a character as to obliterate altogether the real question at issue. A Congress of Capitals might thus result in not only promoting the cause of international peace but might also help in mitigating the virulence of local disputes.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: A NEW MEDICAL SCHOLARSHIP.

THE Royal College of Surgeons has issued the regulations relating to the Begley studentship in surgery and anatomy. This studentship, which is tenable for three years, has been established by funds left for that purpose by the late Mrs. Jane Begley of Hammersmith, wife of the late Dr. William Chapman Begley who died in April, 1887, at the advanced age of 84 years. The establishment of the scholarship is intended as a tribute to the memory of Dr. Begley. He was born in 1803 at Dun Cormac, New Ross, Wexford. The early loss of his father threw upon him the care of a mother and two sisters, but in spite of straitened circumstances he pursued an arts course at Trinity College, Dublin, and obtained the degree of M.A. He subsequently studied medicine and proceeded to the degree of M.D. In addition to this qualification he obtained the diploma of M.B.O.S. Eng. in 1830 and in 1872 was elected F.R.C.P. Lond. Dr. Begley will chiefly be remembered by his connexion with the Hanwell Asylum where he spent 34 years of his life in charge of the male department. During this long period of service his utmost endeavours were exerted to advance the usefulness of his position and to add to the improvements of this great institution. But he laid the foundation of his surgical skill in Derbyshire, where he had a large practice, the result of being in medical charge of a cotton factory. The factory was afterwards burnt out and the owner was ruined, hence Dr. Begley's removal to London and his appointment at Hanwell. Failing health prevented him writing his experiences at Hanwell, which is much to be regretted as he had a very extensive knowledge of mental disorders. The regulations relating to the Begley studentship specify that the studentship will consist of the dividends (£20 per annum) derived from the Begley bequest, and will be tenable for three years. The studentship will be awarded in April,

1906, and thereafter triennially, or at such time as any studentship may become vacant. It will be open, on the occasion of the first award, to any candidate admitted to the second examination of the Conjoint Examining Board in England held in April, 1906, and will be awarded to the candidate obtaining the highest number of marks in the anatomical part of the examination. If two or more candidates in the anatomical part of the examination shall obtain an equal number of marks, being with respect to the other candidates the highest number of marks obtained by any candidate, references shall be made to the marks obtained by them respectively in the physiological part of the examination and on the combined result the adjudication shall be made, and if their marks shall still be equal it shall be open to the two senior examiners in anatomy appointed by the Royal College of Surgeons to call upon such candidates to present themselves for further examination or to take such steps as may enable them to adjudicate in the matter. The stipend will be paid yearly and the student will receive the first instalment within three months after the award of the studentship and will be required, before payment of the second and third instalments respectively, to send to the secretary of the College a certificate from the dean of his medical school to the effect that his conduct has been satisfactory and that he has been applying himself diligently to his studies.

A MUNICIPAL MILK DEPÔT FOR LAMBETH.

ON July 14th, 1904, the Lambeth borough council decided to establish and to maintain within the borough a milk depôt for the distribution and sale, at a nominal charge, of specially and suitably prepared or modified wholesome cows' milk for the use of infants whose mothers are unable to suckle them wholly or in part. The depôt, which is situated at 66, York-road, Westminster Bridge-road, S.E., was opened on Jan. 1st and every effort will be made by enlisting the help of the clergy, medical men, guardians of the poor, district visitors, and the like to insure that the benefits of the depôt are confined to deserving cases. The premises are fitted up with strict attention to hygienic requirements and the milk is to come from a farm in Hampshire which is to be under medical and veterinary supervision. The milk is guaranteed to be up to Government standard and the cream is to contain not less than 50 per cent. of butter fat. On arrival at the depôt the milk is filtered, cooled, "humanised," and after pasteurization is stored in special bottles, each bottle holding just enough for one meal. The charges are 3d. daily for an infant under six months of age and 4d. daily for infants over six months up to 12 months. A slightly higher charge is made for persons living outside the borough. Female sanitary inspectors are to be told off to visit the infants and arrangements have been made for the weekly weighing of infants under the supervision of the medical officer of health. A table of simple instructions is given to all parents or guardians who use the milk depôt. There is one very interesting underlined paragraph in the official circular which runs as follows:—

The Council realise strongly that no artificial (or hand) feeding of infants can, in any way, compare with natural feeding (or suckling), and instructions have been given to insure that the Depôt milk shall not be improperly used, e.g., by mothers who are capable of properly and efficiently suckling their offspring, but who simply, for some reason or other, refuse so to do.

This is an admirable regulation in theory but we do not envy the task of an inspector, whether male or female, who has to decide whether or not a Lambeth mother is capable of suckling her child but simply refuses to do so. The system of municipal milk depôts is an excellent one. If it be impossible, as it seems at present, to insure that all town dwellers shall have a sufficiency of sleeping room, together with a proper supply of sunshine and of air, it is nevertheless

quite feasible to insure that they shall not be supplied with adulterated or impure milk. Perhaps the Lambeth council will now make it incumbent upon all purveyors of milk to declare openly that the milk sold by them contains preservatives, should it do so, together with the nature of the preservative and the amount thereof. If preservatives are harmful, and there is doubtless a difference of opinion on the matter, the public should by all means know the fact. If preservatives are not harmful, and in the opinion of milk vendors they are not, and the public like them, then there can be no harm in the public knowing that they are used. We think that the Lambeth borough council is to be congratulated on its new departure, although it has taken a long time to carry out its decision. The scheme will, of course, mean an additional charge on the rates, for hardly any municipal undertaking in London is ever profitable or even self-supporting, but if the appalling infantile mortality of 151 per 1000 can be brought down Lambeth may congratulate itself. We see that the depot is not to be open on Sundays but there is no intimation as to whether a double supply will be given out on the Saturday or whether infants will have to do without municipal milk from Saturday to Monday.

TYPHOID EPIDURAL ABSCESS.

It is now well recognised that the typhoid bacillus may remain in the system after recovery from typhoid fever and give rise to abscess in various parts, particularly in the bones. At the meeting of the Société Médicale des Hôpitaux of Paris on Nov. 17th M. F. Raymond and M. J. A. Sicard reported a case in which suppuration took place in a situation in which it does not appear to have been observed previously—the epidural space of the lumbar region. A man, aged 48 years, contracted typhoid fever in January, 1905. During convalescence, at the beginning of March, he felt severe pains in the right hypochondrium, right iliac fossa, and right leg. The iliac fossa was puffy. Progressively the leg became paralysed and the symptoms, sensory and motor, appeared on the opposite side. In May, two and a half months after the onset of the paralysis, there were almost complete paraplegia and paroxysms of pain of intense severity. The legs atrophied and the reaction of degeneration was obtained in the quadriceps and adductors of the right thigh. In the area supplied by the crural nerve hyperæsthesia was found at some times and hypo-æsthesia at others. The sphincters were little affected. The knee-jerks and tendo Achillis reflexes were absent. There was no clonus and Babinski's sign was not present. No particularly painful spot could be found in the lumbosacral region. The temperature ranged irregularly between 98·6° and 101·3° F. As the onset of the symptoms had been marked by swelling and puffiness in the neighbourhood of McBurney's point, extension of disease to the cord by the medium of the lumbar plexus from an infectious appendicular focus (the meta-typhoid appendicitis of Dieulafoy) was suspected. M. Raymond and M. Guillaïn have published a case of ascending neuritis of the lumbar plexus after appendicitis. Although all the symptoms seemed to point to ascending neuritis and consecutive myelitis it was decided to obtain further information by lumbar puncture. To the great surprise of M. Raymond and M. Sicard, as soon as the needle penetrated the ligament between the third and fourth lumbar vertebrae and entered the epidural space drops of pus began to flow. The typhoid bacillus was found in the pus. On the following day laminectomy of the third and fourth lumbar vertebrae was performed and half a spoonful of pus mixed with blood escaped from the epidural space. The laminæ removed were found to be quite sound. During the operation some cerebro-spinal fluid was removed with a Pravaz syringe. It was clear and devoid of cells. The wound was drained,

good recovery ensued, and the symptoms gradually disappeared. At the time of the report all that remained was slight rigidity of the spine. Thus the typhoid bacillus became located in the fatty and cellular tissue which fills the epidural space and there produced suppuration.

THE WINTER EXHIBITION OF THE ROYAL ACADEMY.

THE winter exhibition of the Royal Academy which was opened to the public on Jan. 1st is a notable exemplification of the saying, Time brings its revenges. A large number of the pictures exhibited are by masters who during their lifetime were, from the Academy point of view, outside the pale. Burne-Jones, Alfred Hunt, Rossetti, and Simeon Solomon occupy a large space upon the walls and their works form a by no means inconsiderable portion of a collection of extraordinary interest. From our own purely professional point of view the chief picture in the exhibition is the fine portrait of Dr. John Ash by Reynolds. This picture, which is lent by the Birmingham General Hospital which owes its foundation to Ash, was painted in 1788 and represents Ash in his doctor's gown, wearing a black velvet suit and a wig. He is seated in a chair holding a plan of the hospital, the buildings of which appear in the background. Ash was born in 1723 and educated at Trinity College, Oxford, whence he graduated as M.D. in 1754. He settled in Birmingham and soon acquired a large practice. When at the height of his fame he became melancholic and had to be separated from his family. According to Munk,¹ he recovered his mental balance by means of the study of Euclid. Anyway, he did recover and resumed practice with great success in London in 1787. In the same year he was admitted a Fellow of the Royal College of Physicians in which body he held many offices. He died in 1798. Of the other works in the exhibition there are fine examples by Turner, Hogarth, R. Wilson, de Wint, Romney, Linnell, Van Dyck, Frans Hals, and many others. Altogether it is a very noteworthy exhibition and is small enough to be seen with comfort.

MEDICAL MATTERS IN LONDON ELEMENTARY SCHOOLS.

THE report of "The Medical Officer (Education)" for the year ending March 31st, 1905, was submitted by the education committee to the London County Council on Dec. 13th, 1905, and now lies before us. The report has a much wider bearing than would appear from the date which it bears, for it contains the substance of Dr. J. Kerr's two preceding reports made to the late London School Board. Previously to the London School Board there had been no such reports, so that from a medical point of view only statistics dealing with the last three years are available, which is much too short a period of time whereon to found any dogmas as regards school hygiene and the like. The report now before us deals very fully with the physical conditions of child life in London, especially as regards mental activity and educational fitness or unfitness. In 1903 a scheme was put forward for an inquiry into the relations between (1) educational status; (2) the physical condition; and (3) the social condition of about 50,000 London school children. Cost, however, stood in the way and even a more modest scheme, "which would not cost more than £300, has been felt to be inopportune and at present is in abeyance." Dr. Kerr considers that an inquiry ought to be carried out, for, as he says, "the vitality statistics of those who are about to enter on active service in the affairs of life, and whose energy is the chief of the national assets, is surely worth the cost of collection." We quite agree with him but the money should be found by the State and not by the ratepayers.

¹ Roll of the Royal College of Physicians of London, vol. II., p. 378.

A beginning, however, has been made by two medical practitioners—namely, Dr. Frances May Dickinson Berry who examined into the conditions of 1612 girls, and Dr. O. J. Thomas who examined 1861 boys coming generally from the same districts. The results of this inquiry may be shortly summarised as showing that poverty, exemplified by want of clothing, personal uncleanness, and bad housing, distinctly affects for the worse physique as expressed in terms of height and weight. Overcrowding—i.e., living more than five in one room—produces startling effects, of which tables are given. Out of ten children coming from families living more than five in one room, all except one were markedly deficient in height and weight, although, curiously enough, their mental activity was on the whole good. Statistics are given of one family where five children and the father all lived in one room. There were three girls, aged respectively 22, 16, and 15 years, and two boys, aged respectively 18 and 9 years. In such circumstances as these how can we expect to find even the most elementary regulations of morality, decency, or self-respect attended to? As regards the age of school attendance, Dr. Kerr is in favour of school for infants, if they are properly taught, as up to now they have not been, "but this is being amended." The provision of crèches is recommended, supposing that the difficulty of finding the money can be got over. The remainder of the report deals mainly with the question of infectious diseases in relation to school attendance and with matters such as vision, hearing, special schools, the lighting, heating, and ventilation of school buildings, and with school hygiene. An appendix by Dr. Thomas deals with an inquiry conducted by himself, in conjunction with Dr. S. Davies, into the outbreak of measles in the Woolwich district which commenced in 1904. In a large number of instances infection was not contracted at school but at home. A list of ten general conclusions to which Dr. Thomas and his colleague have come, "as a whole up to the present," is given. The whole report is of great interest and importance and we hope to deal with the matter therein contained at greater length in a future issue.

SUNLIGHT IN 1905.

THE first thing noticeable in glancing at the table which follows is the large amount of sunshine enjoyed during the year at some stations compared with others in the same region. It is observed, for instance, that in the south, Bournemouth, Torquay, and Hastings were considerably more sunny than the other places and that Southampton, which is some distance from the sea, had less sun than all. This illustrates a rule that is general in these islands, where there is almost always more sunshine on the coast than inland. It does not at all follow, however, that the three resorts so favoured by 1905 will be in the same prominent position at the end of 1906, for the average number of hours is nearly the same all along the south coast. In the western group Blackpool was the brightest and that resort was closely followed by Tenby, and Douglas, Isle of Man. Among the resorts on the east coast of Great Britain there is one spot that stands far above the others. This is Lowestoft, the most eastern part of the kingdom. Its grand total of 1827 hours was not only larger than that at any other place in its vicinity but also larger than at any of those on the other coasts. Taking an average of the past 25 years, however, there is slightly more sunshine on the south coast than on the coast of East Anglia, but last year the important months of April and June were wet and dull in the south of England, while the contribution of August was also less than usual. Among the inland stations it is somewhat surprising to see that Bath received less sunshine than northern Harrogate and it is not often that the Glasgow aggregate

exceeds that at Manchester. The Channel Islands possess the highest average sunshine, but during last year the deficit was very great, 211 hours at Jersey. The brightest spot relative to its average was Blackpool, where the excess was no less than 398 hours.

Sunshine in 1905.

Station.	No. of hours.	Station.	No. of hours.
East—		West—	
Aberdeen	1360	Tenby	1735
Scarborough	1523	Aberdovey	1509
Skegness	1760	Llandudno	1521
Lowestoft	1827	Southport	1603
Clacton-on-Sea	1688	Blackpool	1780
Margate	1583	Douglas, Isle of Man ...	1743
South—		Inland—	
Hastings	1773	Glasgow	1201
Eastbourne	1691	Harrogate	1699
Brighton	1678	Manchester	1019
Worthing	1714	Nottingham	1420
Southampton	1664	Birmingham	1173
Bournemouth	1815	Bath	1542
Torquay	1786	London, Westminster ...	1239
Jersey	1733		

THE EXPLANATION OF PULSATING EMPYEMA.

THE phenomenon of pulsating empyema or pulsating pleurisy (for the fluid though usually is not necessarily purulent) has always excited considerable interest and many theories have been advanced to explain it. In the *American Journal of the Medical Sciences* for November Dr. W. J. Calvert has published an important paper on the subject and has brought forward an entirely new theory of the pulsation for which he gives good reasons. In 1872 Traube expressed the opinion that the pulsations were due to pericardial effusion associated with the empyema. But in 1875 Frentzel denied that pericardial effusion was necessary for the pulsation. In 1881 Comby explained the pulsation as follows: "When the lung is completely collapsed, pushed to one side, and adherent to the pericardium it no longer resists the heart, the pulsations of which are then transmitted to the fluid in the pleural cavity, thence to the thoracic wall." In 1884 Fereol reported a case of pyopneumothorax pulsans and said that the pulsations were due to the presence of air. Kussmaul explains the pulsation as follows: "When the pleural wall next to the heart is thick enough to resist the impulse of the heart, the heart-beat is transmitted through the pleural wall to the fluid." None of these theories appear to be very satisfactory. It will be observed that in all the pulsations are supposed to be transmitted from the heart. To Dr. Calvert belongs the merit of suggesting a new and unsuspected source of the pulsations—the thoracic aorta—and giving a more satisfactory explanation of the phenomenon. While he was working on cross sections of a body in which there was left pleurisy the anatomical relations of the organs suggested to him the following explanation of pulsating empyema. The requirements for such pulsation are a strongly pulsating organ, contact of the pleural wall with this organ, distension of the pleural sac with fluid, air, or solid material, and a collapsed condition of the lung. The first condition is fulfilled by the thoracic aorta; the second by the normal relation of the pleura to the thoracic aorta; the third by the presence of fluid pus or fluid and air in the pleural sac; and the fourth by the collapsed condition of the lung in pleurisy and empyema. The thoracic aorta above lies slightly to the left of the bodies of the vertebrae; below it is almost in the median

line. Immediately over the aorta is the parietal pleura from the fourth or fifth rib to the diaphragm. In the normal thorax the aortic pulsations are absorbed by the compressible lung tissue and consequently are not transmitted. Fluid in the pleural cavity compresses the lung. As it increases the thoracic walls and mediastinum are pushed outwards from the pleural cavity. As long as the lung contains air it is capable of absorbing the aortic pulsations. Finally it becomes completely collapsed and at the same time the fluid in the pleura increases and presses on the intercostal spaces and in consequence of its increased tension becomes capable of transmitting the aortic pulsations. The diaphragm also probably has pulsations communicated to it but these are absorbed by the abdominal organs. As the pulsation entirely depends on hydraulic principles the nature of the fluid is not important. However, few cases of pulsating serous effusions have been recorded. In certain cases, when part of the fluid has been withdrawn the pulsation has been observed to cease—a fact which accords with the explanation given. In the majority of cases of pulsating empyema the left side is affected. Examination of transverse sections of the thorax shows that the right pleura when distended may be pushed against the aorta. Hence the explanation of those rare cases of pulsation on the right side.

THE WINES OF THE GIRONDE, WITH ESPECIAL REFERENCE TO CLARET.

UNDER the above heading we hope to publish in an early number the report of our Special Commissioner who was appointed by us a few months ago to visit the claret-producing districts of France during the last vintage. The investigation is now completed and the report will give an account of the processes involved in the production of claret and will include the analyses of typical clarets selected on the spot by our Commissioner, which will be compared with similar analyses made of clarets purchased in the open market in this country. The question as to whether, on the whole, the supply of Bordeaux wines may or may not be trusted will be discussed in proper sequence. Further, a section of the report will deal with the light natural clarets of France considered from a dietetic point of view, and incidentally the sociological aspects of the present habits of the nation in regard to its choice of an alcoholic beverage will be discussed.

SIGHING, GROANING, AND MOANING.

It is a well-known physiological rule, often enforced by the late Mr. Herbert Spencer, that all forms of psychological emotion aroused beyond a certain pitch vent themselves in physical expression. On two recent occasions we have considered in THE LANCET certain common phenomena which are the respiratory expression of abnormal nervous functions resulting in the sudden activity of the diaphragm associated usually with some degree of vocalisation.¹ Sobbing, sighing, moaning, and groaning are, as it were, sentences in a monosyllabic cosmopolitan language. These sounds are really the vocal representation of certain overwrought physical or mental states consequent in general upon a longer or shorter period of inhibition of the rhythmic discharge of the respiratory centre situated in the spinal bulb; the diaphragm has been fixed, the breath either voluntarily or involuntarily has been held or has been shallow whilst breathless introspective attention has been paid to some absorbing pain or sorrow. This condition is markedly present in patients suffering from melancholia who continually and deeply sigh. If this expression of excessive psychical

stimulation is rapidly and vigorously performed a cry of anguish or of fright may result, whereas at the other end of this series of phenomena is the feeling of "wanting to sigh," well known among those who are run down in general health. At times these sounds are emitted with the sole object of eliciting the sympathy of bystanders; this is notably the case with hysterical cries. There is, however, no doubt that there are considerable mental comfort and relief obtained from a series of long-drawn sighs during a period of sorrowful depression or from noisy ejaculations of the nature of groans and moans made by a sufferer from such a painful disorder as acute dyspepsia or violent toothache.

THE RIGHT HONOURABLE SIR WALTER FOSTER, P.C.

THE granting to Sir B. Walter Foster of the dignity of a Privy Councillor is a well-merited distinction to a member of the medical profession, although the honour, so rarely gained by medical men, has in his case been awarded almost wholly for political work. From 1892 to 1895 Sir Walter Foster acted as Parliamentary Secretary to the Local Government Board, having as Member of Parliament for the Ilkeston division of Derbyshire faithfully served his constituency and party. At the Local Government Board he was recognised by both sides of the House as a thoroughly able and conscientious administrator, and the medical profession, who perforce regard the Board as the medical bureau of the country, felt safe in his hands. Sir Walter Foster has contributed to the literature of medicine both from the point of view of the treatment of disease and in the wider aspect of public health, has been an important and energetic member of the British Medical Association, and was for ten years a Direct Representative of the medical profession upon the General Medical Council.

THE EVOLUTION OF THE TREATMENT OF SEROUS PLEURISY.

THE history of the treatment of serous pleurisy is an interesting one. As Dr. William Ewart remarked at a recent meeting of the Chelsea Clinical Society, little progress was made until the beginning of the nineteenth century. Dr. Ewart thought that the cause of this long delay was clearly traceable to the absence of clinical methods of diagnosis until Laennec's discovery of auscultation. The recognition that certain symptoms were produced by the collection of fluid in the pleural sac naturally led physicians to seek for some methods by which the effusion could be removed. Dr. Ewart's remarks in this connexion were valuable. He pointed out that three periods might be distinguished in the evolution of treatment: (1) from 1800 to 1834 therapeutic measures were purely medical—paracentesis was hardly ever practised; (2) from 1834 to 1869 (from Davies to Dieulafoy) paracentesis gradually came into fashion—this was a mixed period, partly medical and partly surgical; and (3) from 1869 onwards the treatment became almost exclusively surgical and medication fell into the background. Dr. Ewart then mentioned the principal steps in improved surgical procedure which had from time to time been introduced—the exploratory puncture employed by Davies (1834); the use of the syphon suggested by Carter in 1830 and ultimately elaborated by Potain and by Sir Richard Douglas Powell; and the construction of the aspirator by Stamsky in 1841 and its subsequent improvement by Dieulafoy in 1869 and by Potain in 1872. The methods employed at the present time differ, some practitioners preferring the syphon and others the aspirator, but in the majority of cases the use of the exploring needle precedes actual withdrawal of the fluid. In considering the medical therapeutics of serous pleurisy Dr. Ewart remarked that the English school took the lead

¹ THE LANCET: Yawning, Jan. 21st, 1905, p. 173; Hiccough, August 25th, 1905, p. 616.

in advocating the common-sense principle of feeding instead of starving the sick. He was further of opinion that the "expectant treatment," derived from the scepticism of science on the one hand and of Hahnemann on the other, rapidly gained ground and paved the way for a growing neglect of drug treatment. More recently certain measures have been suggested having for their object the prevention of the re-accumulation of the fluid. In referring to this part of the subject Dr. Ewart mentioned the method published by Sir James Barr, which includes not only the injection of air but the after-injection of adrenalin, and which may therefore be regarded as a "combined medico-surgical" method. This combination was also stated to be a feature in the "preliminary treatment" of serous pleurisy. Dr. Ewart maintained that much might be effected medicinally by way of preparation before paracentesis to insure successful re-absorption of the remnants of the effusion. He stated that the "preliminary intravenous injection method" provided in addition a local preparatory treatment of the pleura. Hitherto adrenalin had been used, as in Sir James Barr's method, but other agents might become available. Dr. Ewart went even a step further and related a case in which the preliminary injection led to re-absorption and so obviated the necessity of tapping. He hoped, therefore, that in a proportion of cases the preliminary injection might in itself be a method of cure. The recurrence of effusion after paracentesis is by no means an uncommon event and any measure by which this may be prevented is well worthy of trial. The remarks made by Dr. Ewart merit attention, for they deal with a condition which is constantly met with in the ordinary course of practice.

MEDICAL RECIPROCITY WITH JAPAN.

At the last session of the General Medical Council the motion of Dr. Norman Moore that the second part of the Medical Act, 1886, should apply to the empire of Japan was carried without discussion. The recommendation of the Council was approved at a meeting of the Privy Council in December last and has now been duly recorded in the columns of the *London Gazette*. This will subsequently give to Japanese medical men the right to be registered as foreign practitioners in the Medical Register. This recognition of the excellence of the medical work done by our Japanese allies will be approved by all British medical men.

WE understand that arrangements are being made for erecting a memorial to Dr. Ernst Ziegler, professor of pathological anatomy in the University of Freiburg in Baden, who died on Nov. 30th last. As already mentioned in THE LANCET of Dec. 23rd, 1905, p. 1874, Professor Ziegler was a well-known authority on pathological subjects and the founder of two periodicals. He was also highly esteemed as a teacher of pathology. Some new buildings, including a large lecture-room, are being constructed at the University and the present intention is to place a bust of the deceased in the lecture-room. Subscriptions are invited for this purpose and should be forwarded with the designation "Ziegler Ehrung" to Dr. Edgar Gierke, Freiburg i.-B., Rosastrasse 9.

Lord Rothschild, G.O.V.O., P.O., has accepted the office of President of, and Sir Frederick Treves, Bart., G.O.V.O., O.B., LL.D., the office of consulting surgeon to, the Royal Dental Hospital of London.

THE honour of a Privy Councillorship has been conferred upon Mr. Henry Labouchere, whose fearless exposures of fraud in the columns of *Truth* have earned the gratitude of medical men. His denunciations of numerous impostors

masquerading as healers of disease and thriving upon the credulity of the public have greatly helped our endeavours to curtail the rampant mischief of quackery. We congratulate Mr. Labouchere upon the honour that has been conferred upon him.

THE medical officer of health of the Cape Colony states that for the week ending Dec. 9th, 1905, the condition of the Colony as regards plague was as follows. No case of plague in man or other animal was discovered at any place throughout the Colony except at Port Elizabeth, where 1 plague-infected mouse was found. As regards the Mauritius a telegram from the Governor received at the Colonial Office on Dec. 29th states that for the week ending Dec. 28th there were 2 cases of plague and 2 deaths from the disease.

WE are requested to announce that the endowment fund now being raised for the family of the late Professor G. B. Howes, F.R.S., will shortly be closed and all intending contributors are asked to send their contributions without delay to the treasurer, Mr. Frank Crisp, at 17, Throgmorton-avenue, London, E.C.

Looking Back.

FROM

THE LANCET, SATURDAY, Jan. 5th, 1828.

A Correspondent who signs himself X.Y.Z., complains of the five years apprenticeship exacted by the regulations of the Apothecaries Company, and suggests an improved system of education in toto. As long as the profession remains under the ban of its present rulers, no remedy can be effective; nothing short of a radical extinction of the present accursed system will avail, and that this will speedily occur, our correspondent may rest assured. The latter observations apply to the letter of Mr. ALISON, of East Retford, who complains that medical men have not the power of legally enforcing payment for attendance, and cites the authority of an eminent counsel to that effect. All this, we repeat, is to be traced to the imbecility and sapineness of our rulers, or rather, to the wretched and narrow-minded policy which dictated the framing of laws for their own immediate benefit, whilst the majority of the profession remain unprotected.

The Worshipful Company of Apothecaries seem to be universally despised; we have literally a pile of letters from various sources, complaining of their "worships." One signed W.P. speaks of the injustice resulting from the inquisitorial power possessed by this Drug Company, of visiting the shops of apothecaries and inspecting the drugs—destroying them too, if in the plenitude of their wisdom they should deem fit. It certainly is a most odious enactment—one that is in direct violation of every principle of justice, and utterly opposed to the boasted liberty of the subject. *Prima facie*, the thing is glaringly absurd, that vendors of drugs should be made the judges of articles, furnished by rival traders.

With respect to the late regulations of the Company, on which subject we have many letters, we have already expressed our opinions. Well, indeed, might Napoleon exclaim, that the English were but a nation of shopkeepers, when we reflect, that the sacred trust of regulating and superintending medical education, is here placed in the hands of an ignorant herd of drug dealers.

An Occasional Contributor laments the want of means in our public charities, for giving to the sick the advantages of locomotion in the open air, so essentially beneficial in many diseases.

The *Per-centage* system alluded to by our correspondent, F.P., from Cheltenham, as existing between a certain physician and druggist of that town, is truly disgraceful.

¹ Excerpts from "a compendium—a digest of the mass of correspondence now lying before us" entitled "Excerpta quadam ex Epistolis Amicorum."

THE ADULTERATION OF SILK WITH TIN AND OF FLANNEL WITH EPSOM SALTS.

So long ago as 1899 this subject received attention in our columns when the results of a detailed examination, carried out in THE LANCET Laboratory, of a large number of dress materials were published.¹ Analysis showed that what in wearing apparel may fairly be regarded as foreign matter was frequently present in considerable quantity and it was pointed out that many of these mineral substances, although apparently insoluble under ordinary conditions, were in most cases rendered soluble by the action of perspiration. Consequently, there was risk that poisonous substances might be brought into intimate contact with the skin under conditions favourable to their absorption. Although only insignificant traces of arsenic were discovered, zinc, aluminium, chromium, tin, magnesium, and iron were found, and, calculated upon the total weight of material sufficient to form a dress, it was found that the mineral matter present varied from one-tenth of an ounce to as much as nearly six ounces. Recent experiments made in THE LANCET Laboratory upon a number of samples of silk bought in the ordinary way at West-end drapery establishments would seem to show that the evil in question has certainly not diminished since the former article on the subject appeared; in fact, recent inquiries indicate that the loading and adulteration of fabrics have during the last few years become a very serious question for the community.

The adulterant found in the samples of silk recently examined is stannic salt and the quantity present in one case was nearly 36 per cent. The following is a list of some of the actual amounts discovered, from which it will be seen that although there was considerable variation in the quantities of tin present none of the samples examined was guiltless of the adulterant.

Analyses of Six Pieces of Silk.

Piece.	Percentage of total mineral matter.	Percentage of tin calculated as stannic oxide (SnO ₂).	Percentage of real silk present.*
1	34.00	29.00	57.36
2	34.30	29.80	55.70
3	24.20	19.50	60.00
4	42.40	31.60	60.00
5	42.40	31.60	50.00
6	47.10	35.90	50.00
Averages...	37.40	29.60	53.84

* The percentage of real silk present is calculated from the amount of nitrogen present, 18 per cent. of which represents 100 per cent. of silk. The nitrogen therefore multiplied by 5.5 gives the real silk present.

The adulteration of silk has now become such an established "industry" that a short statement of the process by which it is effected may prove interesting. One of the principal substances composing raw silk and one which may be considered as the active substance in the silk is known as sericine. This has a slightly acid reaction and a power of combining directly with metallic oxides and basic dyes and advantage is taken of this fact to weight cheap silks to an enormous extent with tin. The method of procedure is to soak the silk for several hours in a solution of stannic chloride, after which the fabric is passed through a cold solution of carbonate of soda to set free the tin in a basic condition, so that it can combine with the sericine. A bath in neutral soap solution to make the fibre supple and to increase its affinity for more weighting material follows and the fabric is now ready to take another turn in the tin bath. Three passages through this process will increase the weight of the silk by from 25 per cent. to 30 per cent., six by 50 per cent., seven by 75 per cent., eight by from 90 per cent. to 100 per cent., and ten by about 160 per cent. The weighting process is carried out in darkened rooms, as sunlight or any

strong light renders the silk brittle during these operations. Although the strength of the fibre is greatly reduced the appearance and lustre of the silk do not seem to be affected seriously for the time being. All goes well so long as the fabric is kept in the dark, but as soon as it is worn the light decomposes the compound of the tin and the sericine, producing oxide of tin and free acids, which rapidly destroy what is left of the fibre, so that a garment of weighted silk will tear in the wash under ordinary handling, especially under the armpits where the effect of perspiration has been added to the other destructive agencies. As this cheap silk is used not only for dress-making *per se* but as lining for other dress materials, it frequently comes in contact with the skin, and even in cases where underclothing may protect the skin from immediate contact with the silk there is always the risk that perspiration may set free the oxide of tin in a soluble form and by its absorption by the other materials bring it in direct contact with the skin, so that the wearer of such material runs considerable danger of local irritation being set up, if nothing worse.

Before passing on to other materials we must call attention to a particularly obnoxious method which is in use for colouring, we cannot call it dyeing, the cheap materials used for linings and similar purposes. In this case the dye is made up into a kind of paste with some sizing material and instead of the fabric being properly dyed this coloured size is spread over the surface by rollers. When dry it has a perfect appearance and the fraud is not distinguished until the fabric is brought in contact with moisture, either in the wash or through perspiration, when the dye practically leaves the fabric. Although it is true that the majority of the dyes derived from aniline and what are known generally as coal-tar colours are very much faster to light than they used to be, the lack of fastness to soap and water, which many of the materials at present in use exhibit, is a source of serious complaint from laundrymen and those who have to handle them. A suit of flannelette pyjamas, upon which we recently made some experiments, was of a very pleasant blue shade when purchased but in two washings the colour was completely removed. Instances of this kind might be multiplied almost indefinitely from other instances which have come under our own experience or have been brought to our notice by laundrymen from whom we have made inquiries.

The loading of fabrics intended for wearing apparel is by no means confined to silk and is such a serious factor in the manufacture of the cheaper varieties of flannel, amongst which we may include blankets, that in sorting the various articles which come into the laundry before going through the cleansing process a laundryman has to be very careful to pick out any new goods of this description and to wash them separately, otherwise the large amount of loading material which they contain might interfere so seriously with the washing process as to necessitate a second washing of a whole batch of goods. This is even more true of the cotton bands, &c., attached to the woollen materials, which usually receive separate treatment. This weighting of material is so serious in almost every department that it is quite a revelation to see the quantity of loading material, largely china clay, which is washed out of cheap table linen and similar goods and to observe what a very little of the apparently stout fabric appears to be left after contact with water for a few minutes. We must recall also that in our previous investigation into the amount of mineral matter in dress fabrics we discovered considerable proportions of Epsom salts and zinc compounds in flannel.

It would be bad enough if the sophistication of fabrics were confined to loading them, but unfortunately this is not the case. The modern manufacturer in many instances adulterates the fibre of his fabric first and loads it afterwards. Silk is adulterated with artificial silk made from cellulose, flannel and woollen material with cotton, linen with cotton, whilst "mercerised" cotton is employed in many ways. Some of these mixtures of fibres are quite legitimate, but a good many are not, and amongst the most serious of which the community has to complain at the present time is the adulteration of linen with cotton. The substitution of cotton for linen has become so serious that the Irish flax spinners have been compelled to take action in self-defence and prosecutions of retailers have occurred in most of our principal towns. They form very interesting reading for they show that a certain section of the retail trade has become so lost to a sense of right and wrong that it is seriously claiming that

¹ THE LANCET, Oct. 25th, 1899, pp. 1155-57.

the passing-off of cotton goods for linen is a trade custom and therefore justifiable. The common practice seems to be to sell cotton shirts or collars or "fronts" made of one-ply linen and two-ply cotton, or in other proportion according to the nature of the garment. In many cases these were actually sold as "all linen" and so described on the invoice.

In a recent prosecution at Bradford the manager of a firm seriously contended that the word "linen" was the trade term for linen-fronted goods and that it did not necessarily imply that in their trade the goods so described were all flax. In reply to a question from the stipendiary magistrate the witness admitted that he had not a single all-linen collar in his place—not one that he would guarantee to be pure linen. A defendant at another court remarked that he did not believe that anyone present was wearing an all-linen collar; he felt quite sure that the prosecuting inspector's collar was cotton; and so on.

Now, whatever may be the hygienic difference between cotton and linen, there is a large difference in the cost and in the wearing capabilities. Cotton fabrics disintegrate comparatively readily, the fibre being much shorter than linen, whereas linen has a long and very strong fibre. The consequence is that cotton fabrics contribute rapidly to the formation of that fluff which is the bugbear of the modern housewife. The table-linen not so very long ago consisted wholly of linen; nowadays a large proportion of it consists of a cotton warp and a linen weft and sometimes it is entirely of cotton. In the wash the difference soon becomes apparent; an appreciable amount of fibre becomes separated from the surface of the cotton fabric, and although a certain amount is removed in the rinsings yet a large proportion remains clinging to the materials when dry. In use this soon becomes separated and adds appreciably to the dust and dirt of the living-room. In some of these loosely woven table cloths, which are sent out felted together with size, starch, and china clay, so that they look thick and solid, the fluff is so serious that if a laundryman happens by misfortune to wash one in a batch with other table linen it will contaminate the whole, and the unfortunate customer who uses good table linen is horrified to think that the laundryman is destroying her expensive fabrics in the most ruthless manner. The wholesale adulteration of linen has become so serious that a large linen shop in the West-end of London is, or was a short time since, placarded with notices to the effect that on account of the difficulty of distinguishing between cotton and linen the assistants were forbidden to give any kind of warranty. This notice is akin to the announcement by which many publicans evade the Sale of Food and Drugs Act—namely, by stating that spirits are sold as "diluted."

To take the case of flannels and woollens again: these are frequently adulterated with cotton and loaded, although in a different manner from cotton, but even amongst the numerous goods that are sold as natural wool and guaranteed unshrinkable many are found to which this term can only be applied in derision. On account of the construction of the fibre, woollen goods if not washed with great care are always liable to shrinkage, but unless they have been very badly treated this shrinkage should not be great if the fabric is properly shrunk in a soap liquor before the garments are made up. A large number of the garments now sold through the retail hosiers and linendrapers are not properly shrunk, even in the case of some which are largely advertised and are supposed to bear a high name for quality, the result being that the shrinkage is excessive. The wool fibre is covered with a number of serrations and these have a tendency to interlock and to pull the fabric closer and closer together, especially if during the washing process the fabric is subjected to serious changes of temperature, such as removing from hot water into cold, which causes the fibres to move. It has been discovered, however, that treatment of the fibre with hydrochloric acid will cause such an alteration in these barbed tips that the fibres have no longer a tendency to interlock, although they are not seriously affected in any other respect, and a large quantity of woollen underclothing which, to use the trade term, has been "kymed" is now on the market.

Shrinkage is not confined to woollen goods, as cotton goods will sometimes shrink along the warp when being washed for the first time. In the modern power loom the fibres are often severely stretched in the direction of the warp and the fabric takes the first opportunity of recovering itself when moistened. On the other hand, we have been shown some samples of chintz which have been causing a

veritable panic amongst the furnishing houses and dyers and cleaners. An ordinary width of this when wetted stretches two inches. The effect of this upon a suit of chintz furniture covering and the feelings of the housewife when she gets it home can readily be imagined.

Yet another very important difference between the old and the new style of fabric is in the length and strength of the fibres employed. The short staple wool, for instance, which is now largely woven into our garments, would have been discarded not many years ago and employed only for making felt, being regarded as too short to weave into satisfactory yarn. In cotton and linen, again, especially the latter, there is nothing like the care employed in selecting the fibres that there used to be, with the consequence that they break much more frequently in the weaving, apart from possessing much less intrinsic strength. Here again there is no time to knot the broken ends properly together but they are given a twist which secures them for the time being. As soon as the size is washed out of the goods when they go to the laundry many of these broken ends develop into holes and we have had a large number of tablecloths submitted to us for examination in which these holes could be traced in various stages of progress. Examination with an ordinary magnifying glass was quite sufficient to show what was wrong with the fabric. Bleaching, again, is conducted in a hurry and the methods employed are much more drastic than they used to be, with the natural result of a seriously weakened fibre.

From the instances which we have given above it will be seen that the trade in fabrics is in as bad a condition now as regards adulteration as was the trade in food and drugs when THE LANCET first stepped into the arena in 1890 to combat the demon of adulteration, and the question arises, What remedies can we propose? The only weapon that the public at present possesses is the Merchandise Marks Act, which penalises a trader for applying a false description to his goods. As applied to the drapery and hosiery trade, however, and regarded from the ordinary purchaser's point of view, this Act suffers from the defect that not only can a coach-and-four be driven through it but two motor-cars as well. Except where cotton is wrongly described as linen it is practically impossible to apply the Act to cases of deception in the sale of fabrics. The trader is much too wily to be caught in such a very loosely woven net as the Merchandise Marks Act. He simply applies some adjective to the word describing the material—he calls it "Chinese silk," "Cathay silk," "Carthaginian silk," anything but "silk"—and is safe. Similarly with flannel, it rarely appears in the linen-draper's window without some patriotic adjective—it is Welsh flannel, Scotch flannel, Irish flannel, but very rarely flannel; certainly not "pure flannel." However desirable it might be in theory to compel manufacturers and retailers to apply correct descriptions to their goods, it would hardly be practicable to compel them to placard their windows with such announcements as "Tin silks: all the rage," "Epsom-salted flannels," "China clay table linen," and so forth, however accurate such descriptions might be. It is equally impracticable to expect customers to demand a warranty with every yard of material which they buy, because, in the first place, they would not ask for it and in the second place they would not get the warranty if they did. Not long since we asked for a written guarantee at a certain wool-shop that the underclothing which we were about to purchase, although warranted in the firm's advertisements not to shrink, would not do so in reality but were refused on the ground that the firm did not know what laundry we were going to send it to. And this brings us to another very serious matter—namely, that the sophisticators of fabrics—manufacturers, wholesalers, and retailers together—are endeavouring to pass the responsibility for their misdeeds on to the unfortunate laundryman or dyer and cleaner who, in nine cases out of ten, is in no way to blame. The bad-wearing qualities of the table linen, which goes into holes on the first wash, the raw edges on the collars, the thinness of the blankets, and so forth, are attributed to the laundryman's chemicals and machinery, instead of to the fraudulent methods employed in the manufacture and sale of the goods. Ladies compare the wearing qualities of the linen that their mothers used to buy with that which they purchase themselves and put the blame on the laundries for the bad qualities of the latter. Good linen, for example, will wear well even in the modern laundry and in proof of this we were shown a handkerchief

not long ago which had gone regularly through the wash for almost a generation, including many years' washing in a modern steam laundry, and which appeared to be little the worse. Such things can hardly be bought nowadays, even if a purchaser is willing to pay a high price. To take the case of the faded silk again, which we have recently analysed: the silk blouse which appeared so charming when new crumbles almost at once in the sun, the tin is converted into oxide, which is removed as powder in the wash, the acid attacks the fibre and causes it to go into holes as soon as it reaches the hands of the laundryman or dyer and cleaner, and when its once proud possessor receives back the rag which was once a blouse, her wrath is expended not upon the draper who sold it but upon the unfortunate dyer and cleaner to whom was intrusted the impossible task of rendering it equal to new.

In distributing the blame we must not place the whole of it upon the shoulders of the manufacturers and retailers, bad as they are, but must mete out a considerable share to the fair sex who in their desire to obtain showy materials at a cheap rate give direct encouragement to these objectionable practices. Every year the cry goes forth for something cheaper than last year that will look as well and the draper is only too ready to meet the demand and to encourage it. Nevertheless, it must be borne in mind that the sophistications are so skilfully conducted that they would deceive all but the expert, and the housewife with a limited purse can hardly be severely blamed if she buys at cheap prices goods which look all right. The real and most serious blame must be laid at the door of the manufacturer and retailer and the only way that we can see open at the moment to save the unfortunate customer from their devices is to educate her as rapidly as possible concerning the practices which are in vogue. This is certainly a large undertaking but so far as we can see it is the only way to grapple with the difficulty in the absence of some drastic legislative measure. One practice that we should certainly like to see prohibited at the earliest moment is the loading of fabrics of any kind with mineral matter—we do not include the mordants which may be necessary to fix the dyes on the material. This practice of loading goods with china clay and other materials was designed in the first instance to swindle the unsuspecting Hindoo who buys his cotton cloth by weight instead of by length and the practice has now spread to the greater part of the goods on the home market. Such loading, whether it be carried out in cotton, linen, or silk, serves no good purpose whatever; it is simply a fraud and is quite unjustifiable. Moreover, we are still of the opinion stated in our previous article that in addition to the actual danger to health caused by the presence of the irritant mineral poisons in dress fabrics, the presence of mineral substances generally "tends to nullify the important properties of clothing of keeping the body warm and protecting it from the cold and, above all, of allowing the free passage of air from within and without."

CHOLERA AND PLAGUE IN RUSSIA.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

THE following returns of cholera cases and deaths in the Polish governments of Russia are in continuation of those furnished in my last letter (THE LANCET, Dec. 9th, p. 1730).

From Oct. 6th (19th) to 13th (26th):—

In the government of Lomza	5 cases	2 deaths.
" " Piotrkow	5 "	0 "
" " Warsaw	2 "	1 death.
" " Plock	1 case	1 "

From Oct. 14th (27th) to Oct. 19th (Nov. 1st):—

In the government of Lomza	5 cases	1 death.
" " Warsaw	1 case	0 deaths.
" " Piotrkow	7 cases	0 "
	and 5 suspected cases.	

From Oct. 19th (Nov. 1st) to Oct. 22nd (Nov. 4th):—

In the government of Lomza	1 case	0 deaths.
" " Lodz	6 suspected cases.	
" " Warsaw	3 "	

From Oct. 24th to 25th (Nov. 6th to 7th) there were 12 cases and 12 deaths in the Polish governments and one

suspected case. On the 26th (Nov. 8th) three deaths occurred; from Oct. 27th (Nov. 9th) to Nov. 2nd (15th) there were 18 cases and nine deaths in the Lomza government; and between the 7th (20th) and the 8th (21st) there were 11 cases and two deaths in the same government. Finally, between Nov. 10th (23rd) and Nov. 30th (Dec. 13th) 24 cases and seven deaths were recorded in the Lomza government.

An outbreak of plague of considerable severity is reported from the Kirghiz steppes of the government of Astrakhan. The disease appeared among a number of Kirghiz settlements in the Naryn district, 250 versts (about 160 miles) from the Khanskaia Stavka. Between Oct. 13th (26th) and Nov. 2nd (15th), in ten settlements extending over an area of 50 versts, as many as 40 "zemlianki" (earth huts) became infected; and 58 persons were attacked by the disease, of whom 23 died. On Nov. 1st (14th) a suspected case occurred in the territory of the Koundrov Tartars in a person arriving from the Naryn district. A second report states that the number of infected "zemlianki" had risen to 71, of which 59 are in the Naryn district and 12 in the First and Second Primorskoi (or Maritime) districts. In the Naryn district 80 deaths had occurred from the disease up to Nov. 8th (21st) and in the two maritime districts 18 deaths had been recorded to the same date. Plague had also appeared in the settlement of Djandakul, in the district of Krasnoyarsk, where 14 deaths had been reported up to Nov. 9th (22nd).

The latest report received here states that between Nov. 12th (25th) and 17th (30th) there had been 33 cases of plague and 41 deaths in the Naryn district, three cases and five deaths in the first, and six cases with 16 deaths in the second maritime district. In the Taigoul community, in the Krasnoyarsk district, six cases and six deaths had been observed. The total number of cases in the Kirghiz steppe had been 293 and of deaths 279, while in the Krasnoyarsk district the cases numbered 23 and the deaths also 23. No further information has been received of the outbreak of plague on the Siberia-Manchurian frontier mentioned in my last letter.

Constantinople, Dec. 23rd, 1905.

REQUESTS TO HOSPITALS IN THE BIRMINGHAM DISTRICT.—The late Mr. John Feeney, one of the proprietors of the *Birmingham Daily Post*, has bequeathed by his will sums amounting to £89,000 to various institutions connected with Birmingham and the district. These include the Birmingham Art Gallery, £50,000; the University of Birmingham, £20,000; the General Hospital, £10,000; and £1000 each to the Queen's Hospital, the General Dispensary, the Eye Hospital, the Women's Hospital, the Children's Hospital, the Blind Asylum, the Middlemore Emigration Homes, the Wolverhampton Infirmary, and the Coventry Hospital. All the above bequests are given free of legacy duty but payment cannot be claimed until the expiration of five years. The bequest to the University is for the purpose of maintaining a professor, with suitable equipment, lecturing on some one or more scientific subjects directly connected with some one or more of the trades and industries carried on in or near Birmingham. This bequest makes a total of £80,000 which the University has received within a period of little more than a month. Under the will of the late Mrs. Hannah Finnie of Malvern Wells £3000 are bequeathed to the Midland Counties' Home for Incurables. The Worcester Infirmary has lately benefited by the following legacies: £200 from Mr. Charles Taylor of Holloway, London, and £100 from Mr. George Arden of Towyn.

LITIGATION REGARDING THE VALUE OF A PRACTICE.—The case of *Coumbe v. Davies* was heard on Dec. 18th, 1905, in the King's Bench Division before Mr. Justice Channell. In this action Dr. J. B. Coumbe sued Mr. G. A. Davies for damages for losses caused by the alleged misrepresentation of the defendant in regard to the value of a medical practice which the plaintiff purchased from the defendant in Newport (Mon.) for £1600. The defendant said that the representations made were true and that the plaintiff was fully aware of all the facts when he bought the practice. The judge stated it would be necessary for Dr. Coumbe to call evidence in support of his charge of fraudulent misrepresentation. Mr. Shee, K.C., said that after the remarks of the judge he proposed not to persist in the charges and they would be withdrawn. Judgment was entered for the defendant with costs.

THE LANCET RELIEF FUND.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., M.D. Lond.), the President of the Royal College of Surgeons of England (Mr. JOHN TWEEDY), the President of the General Medical Council (Dr. DONALD MACALISTER, M.A., B.Sc., F.R.C.P. Lond.), Mr. THOMAS WAKLEY, F.R.C.S. Eng., and Mr. THOMAS WAKLEY, jun., L.R.C.P. Lond., with Sir HENRY PITMAN, M.D. Cantab., F.R.C.P. Lond., as Honorary Auditor.

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

"We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervision of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be benefited permanently thereby.

Seventeenth Annual Report of the Almoners, For the year ending December 31, 1905.

In presenting their Seventeenth Annual Report the Almoners have to record that the balance in hand on Dec. 31st, 1904, was £225 2s. 3d., to which, on Jan. 1st, 1905, the Proprietors of THE LANCET added the sum of £300, making a total sum of £525 2s. 3d. available for grants during the year 1905.

The number of applications received by the Almoners during the year for assistance was 61, of which number nine were rejected by the Secretary as quite outside the scope of the Fund; seven were declined by the Almoners after due consideration; two applications were received on behalf of one person; 12 Application Forms failed to be returned—doubtless owing to the applicants realising that their cases were not of the nature qualified to receive assistance from the Fund; and 32 applicants were relieved by gifts or loans ranging from £5 to £25. The relief of these 32 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £313—an amount just above the normal income of the year. One of the cases relieved came from Australia. The balance at the bank on Dec. 31st, 1905, was £232 13s. 1d.

Many expressions of gratitude for the assistance afforded to applicants have been received by the Almoners; and it is a pleasure to record that in several instances the timely help that the Almoners have been able to give has been the means of averting consequences which could not fail to be disastrous to the applicants had their appeals not met with a ready response. In this connexion it may be mentioned that one case brought to the notice of the Almoners threatened the breaking up of a practice, and the ruin of the practitioner who had worked hard to keep it together during a period of depression, unless a sufficient sum were forthcoming to pay off pressing domestic creditors. Within three hours of the application being received the Almoners had considered the case, doubled the amount of help asked for, and saved the applicant and his family from having the means of their livelihood taken away from them. Several other instances of equally prompt relief might be cited; but they are referred to only in order to emphasise what is to the Almoners a pleasing feature of the Fund which they are called upon to administer—*immediate relief in urgent cases*.
Of applications of a "chronic" character there are still far

too many. A large number have again been rejected, and in some cases the inability of the Almoners to assist has produced anything but complimentary replies. It is quite obvious that the assistance which the Almoners could give would mean only a few days' or weeks' temporary respite to cases of this character—no permanent good could possibly be effected; and it cannot be too emphatically reiterated that THE LANCET Relief Fund exists to meet cases of *sudden emergency*, where timely help will tide the practitioner over unforeseen difficulties, or will afford his widow and orphans temporary relief at the moment of their greatest trial.

Sir Richard Douglas Powell, Bart., K.C.V.O., M.D. Lond., having succeeded Sir William Church, Bart., K.C.B., M.D. Oxon., as President of the Royal College of Physicians of London in April last, thereupon became an Almoner of the Fund, and kindly consented to act as such. The Almoners at their last Annual Meeting had pleasure in causing to be

recorded on the Minutes their warm appreciation of the valuable services rendered to the Fund by Sir William Church throughout the six years during which he acted as one of the Almoners.

In conclusion, the Almoners desire to state that they will at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides* of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications.

(Signed) R. DOUGLAS POWELL. JOHN TWEEDY.
DONALD MACALISTER.
THOMAS WAKLEY, Jun. THOMAS WAKLEY.

January, 1906.

THE LANCET RELIEF FUND.

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1905.

DR	£	s.	d.	By Loans :—	CR	£	s.	d.	By Gifts :—	CR	£	s.	d.
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1905	...	225	2	3	Case No. 643	...	12	0	0				
					" 652	...	25	0	0				
													37 0 0
„ Proprietors of THE LANCET, Jan. 1st, 1905	...	300	0	0	By Gifts :—								
„ Repayment of Loans :—					Case No. 630	...	6	0	0				
Case No. 591	...	0	15	0	" 631	...	5	0	0				
„ Cheque unrepresented (Case No. 651)	...	20	0	0	" 632	...	5	0	0				
					" 633	...	5	0	0				
					" 634	...	10	0	0				
					" 635	...	5	0	0				
					" 636	...	15	0	0				
					" 637	...	5	0	0				
					" 639	...	10	0	0				
					" 640	...	10	0	0				
					" 641	...	10	0	0				
					" 642	...	10	0	0				
					" 644	...	10	0	0				
					" 645	...	10	0	0				
					" 647	...	10	0	0				
					" 648	...	10	0	0				
					" 649	...	10	0	0				
					" 650	...	10	0	0				
					" 651	...	10	0	0				
					" 653	...	5	0	0				
					" 57	...	10	0	0				
					" 658	...	10	0	0				
					" 659	...	10	0	0				
					" 660	...	10	0	0				
					" 661	...	20	0	0				
					" 662	...	15	0	0				
					" 663	...	5	0	0				
					" 664	...	5	0	0				
					" 665	...	10	0	0				
					" 666	...	10	0	0				
													276 0 0
					„ Bank Charges. Cheque Book	...	0	4	2				
					Balance at Bank, Dec. 31, 1905	...	232	13	1				
													£545 17 3
													£545 17 3

I find by the Bankers' Book that the actual Balance on Jan. 1st, 1905, to the credit of the Fund was £225 2s. 3d., to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1905. The balance at the Bank on Dec. 31st, 1905, was the sum of £232 13s. 1d. I have also checked the receipts for disbursements and find the above account strictly accurate.

January 1st, 1906,

HENRY A. PITMAN, Hon. Auditor.

MEDICINE AND THE LAW.

The Fees of Medical Witnesses at Inquests.

AT Lydd recently at an inquest upon the body of a coast-guard a discussion took place between the coroner and a medical man which had as its result the refusal of the medical man to give evidence after the coroner had taken a view of the law which appears to us to be entirely wrong. The coastguard had met with an injury, for which he was attended by Mr. J. A. Procter of Lydd until he appeared to be nearly well. Mr. Procter, however, asked him to come to see him once more on a day named and the man walked some distance to the surgery in order to do so. Mr. Procter had meanwhile been called away to attend a case elsewhere and had asked a medical friend, Mr. O. A. Gaitskell, to see the man in his absence. Mr. Gaitskell on going into the surgery after being informed that the patient was there found him lying on the ground with blood issuing from his nose and mouth and death took place before he could be removed. In these circumstances Mr. Procter was of opinion that the death was not the result of the accident mentioned above and refused to give a certificate to that effect. At the inquest (which, by the way, would have been rightly held in any case) he repeated this opinion and the jury very properly expressed a wish to hear what Mr. Gaitskell, who was with the deceased at the time of his death, might have to say. If they had also insisted on the necessity for a post-mortem examination in such circumstances they would have made an even more useful suggestion, but apparently none was ever held. Mr. Gaitskell arrived and asked before being sworn as a witness that his fee might be paid. In reply the coroner said that only one fee could be allowed to a medical witness and this, as one was already due to Mr. Procter in respect of the evidence which he had given, meant that Mr. Gaitskell would receive nothing. The coroner appears further to have expressed surprise at the question being raised and to have given vent to the observation that the medical man's conduct was ungentlemanly. Mr. Gaitskell upon this declined to give evidence and the only other statement of the coroner which merits comment is one reported in the *Kent County Examiner* to the effect that in 40 years' experience he had never had a similar case. As the coroner referred to so long an experience he may have explanations to give as to what occurred at this inquest which are not before us, but we may point out that the verdict which the jury delivered was, in the absence of post-mortem examination and in the teeth of the opinion expressed by Mr. Procter, arrived at practically by conjecture on their part and not founded upon evidence. They found that the coastguard died "from internal hæmorrhage caused by injuries received by the deceased by the overturning of a boat" and added a rider recommending that the medical officer should visit coastguards when ill instead of their going to him. They had not before them any evidence as to whether this contributed in any way to the death or even as to how or where the death took place, for of course the statement of Mr. Procter of what Mr. Gaitskell, and perhaps others, had no doubt perfectly accurately described to him was not evidence at all. With regard to the discussion between the coroner and Mr. Gaitskell as to the latter's fee, we are inclined to think that his better course would have been to have given evidence and then to have brought an action to recover the fee due to him as a medical witness if it was not paid. The Coroners Act, 1887, contains nothing whatever to indicate that only one medical witness may be called and paid by the coroner. On the contrary, it says (Section 21) that "where it appears to the coroner that the deceased was attended at his death or during his last illness by any legally qualified medical practitioner the coroner may summon such practitioner as a witness." That is to say, in other words, any medical practitioner who has attended the deceased in his last illness may be called to give evidence. By Section 22 "a legally qualified medical practitioner who has attended at a coroner's inquest" as provided by the section quoted "shall be entitled" to the prescribed remuneration. If anything so absurd as the calling of one medical man only were intended, when the truth might be better ascertained by calling two, some expression which would put this beyond doubt could easily have been used. In the statute, moreover, which this section superseded (6 & 7 Will. IV., c. 89, repealed by the Act of 1887), the direction with regard to a

post-mortem examination is that it is to be intrusted to "the medical witness or witnesses who may be summoned; to attend" at any inquest, so that if the Act of 1887 were to have introduced intentionally a new restriction of the medical evidence to one witness it would be retrogressive in its effect. It is not necessary to demonstrate that the usefulness of the coroner's inquest would be considerably curtailed if he could only call one medical witness in any case, considering that the subject of the inquiry is the cause of death, where death has been apparently violent or unnatural, or a "sudden death whereof the cause is unknown."

Medical Evidence at Inquests and the Coroner for Anglesey.

A second inquest calls this week for notice in our regular summary of medico-legal events. The *Liverpool Courier* recently contained a report of an inquiry conducted, upon lines which are fortunately unusual, by Mr. R. Jones Roberts, coroner for Anglesey. A maiden lady living alone was found at the foot of the stairs in her house groaning and unconscious. She was attended by two medical men and died a short time afterwards. It will perhaps surprise those who read of this to learn that at the inquest two witnesses only were called, a child aged 14 years and a woman, both of whom knew no more about the matter than that they saw the deceased on a certain day lying on the ground, for she lived alone. When a juror afterwards asked whether any medical evidence would be called, the coroner said that "they would be no better off if they had it," and further that "it was not usual to call medical evidence in such a case. It was not absolutely necessary for the jury to know the cause of death. It was sufficient for them to say what their opinion was." To this he added some observations relating to the medical profession of a disparaging character and ended by giving as his motive in acting as he did the desire to save the money of the county, for which he described himself as a trustee. The statement that it is not usual to call medical evidence in such a case may be traversed without further comment. With regard to the duty of the jury they have "to inquire" as jurors touching the death and to certify, so far as such particulars have been proved to them, who the deceased was and how, when, and where he came by his death, and they have to find "the particulars for the time being required to be registered concerning the death." The coroner has a discretion, it is true, as to what witnesses he may examine but he is also responsible to the Crown for the proper conduct of inquests, and it is his duty to call the best evidence available as to the cause of death and not to leave the jury to form an "opinion" founded upon conjecture. If through the deliberate omission of a coroner to call a material witness, whether medical or not, a failure to arrive at a correct verdict were to take place the coroner might find his responsibility brought home to him in a serious manner.

Quackery among East-end Aliens.

We have before us an advertisement appearing in the *Jewish Journal*, a newspaper printed in Yiddish and having a considerable circulation among the poorer classes of Jews living in the East-end, or, as passages in the advertisement speciously suggest, passing through it on their way to the United States. Our American cousins do not welcome the diseased foreigner as warmly as we do and consequently the advertiser promises "Ease for those who intend to emigrate to America." Beyond this there are features in the advertisement to which attention may well be called, although the fact of it being printed in a foreign language and addressed to foreigners points to difficulties in the enforcement of the law such as it is. The last line is printed in English and describes the advertiser as "Dr. Leibovitz, 60, Mile End-road." Addressed to an English audience the use of the title "Dr." would certainly be dangerous for the gentleman named unless his qualifications were of a nature to justify it. The Yiddish part of his advertisement claims for him diplomas from New York and registration in the 31st District of Columbia. It also contains an allusion to the preparation of medicines "in his laboratory under the supervision of a qualified doctor." To what extent our translation may justify the suggestion that this would furnish a case for inquiry is a matter for the consideration of those concerned in protecting the poor from deception by persons of this class who advertise as this man does, that he will send his "new book on venereal diseases" to the residence of any who may send 3d. in stamps in payment and that he is ready to "perform operations without a knife and without any hæmorrhage."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 6415 births and 5197 deaths were registered during the week ending Dec. 30th, 1905. The annual rate of mortality in these towns, which had been 16.1, 17.0, and 17.8 per 1000 in the three preceding weeks, declined again to 17.4 per 1000 last week. In London the death-rate was 17.8 per 1000, while it averaged 17.2 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7.5 in King's Norton, 8.1 in Hornsey, 10.1 in York, 10.7 in Reading and in Walsall, 11.7 in Wallasey, and 11.9 in Burton-on-Trent; the highest rates were 21.5 in Burnley, 22.3 in Newcastle-on-Tyne, 22.4 in Tynemouth, 24.2 in Huddersfield, 24.8 in Preston, 24.9 in Liverpool, 25.4 in Merthyr Tydfil, and 30.6 in Hanley. The 5197 deaths in these towns last week included 404 which were referred to the principal infectious diseases, against 373, 391, and 439 in the three preceding weeks; of these, 404 deaths, 117 resulted from measles, 91 from whooping-cough, 69 from diphtheria, 56 from diarrhoea, 43 from scarlet fever, and 28 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Southampton, Northampton, Great Yarmouth, Devonport, Burton-on-Trent, Walsall, King's Norton, Bootle, Warrington, York, or Stockton-on-Tees; while the highest death-rates from the principal infectious diseases were recorded in Coventry, Stockport, Burnley, Blackburn, Preston, Leeds, Middlesbrough, Newcastle-on-Tyne, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Blackburn, Preston, and Leeds; from diphtheria in Middlesbrough and West Hartlepool; from whooping-cough in Rochdale, Burnley, and Newcastle-on-Tyne; from "fever" in Stockport and Wigan; and from diarrhoea in Coventry, Oldham, and Middlesbrough. The mortality from scarlet fever showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the large towns and no cases of this disease were under treatment during the week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 3888, 3670, and 3409 at the end of the three preceding weeks, had risen again to 3446 at the end of last week; 295 new cases were admitted during the week, against 355, 341, and 295 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 376, 460, and 516 in the three preceding weeks, declined again last week to 426 and were 95 below the number in the corresponding period of last year. The causes of 79, or 1.5 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Nottingham, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 41 other smaller towns; the largest proportions of uncertified deaths were registered in Ipswich, Handsworth (Staffs.), Birmingham, Liverpool, Bootle, St. Helens, Manchester, Sheffield, Sunderland, South Shields, Gateshead, and Rhondda.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19.9, 18.2, and 17.4 per 1000 in the three preceding weeks, rose again to 18.2 per 1000 during the week ending Dec. 30th, and was 1.8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 15.2 in Paisley and 15.4 in Leith to 19.3 in Aberdeen and in Greenock and 22.9 in Dundee. The 609 deaths in these towns last week included 25 which were referred to measles, 14 to diarrhoea, 12 to diphtheria, seven to whooping-cough, four to "fever," and three to scarlet fever. In all 65 deaths resulted from these principal infectious diseases last week, against 77, 64, and 83 in the three preceding weeks. These 65 deaths were equal to an annual rate of 1.9 per 1000, which was 0.6 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 45, 31, and 43 in the three preceding weeks, declined again last week to 25, of which 15 occurred in Glasgow, six in Dundee, and three in Greenock. The

deaths from diarrhoea, which had been 11, 18, and 15 in the three preceding weeks, further declined to 14 last week, and included five in Glasgow, three in Edinburgh, and three in Dundee. The fatal cases of diphtheria, which had been five, three, and 11 in the three preceding weeks, further rose last week to 12, of which five were registered in Glasgow, two in Dundee, and two in Greenock. The deaths from whooping-cough, which had been eight, six, and nine in the three preceding weeks, declined again to seven last week, and included three in Glasgow and two in Dundee. The fatal cases of "fever," which had been one, two, and four in the three preceding weeks, were again four last week, and included two in Glasgow, and two in Paisley. The deaths referred to diseases of the respiratory organs in these towns, which had been 126, 117, and 130 in the three preceding weeks, declined again last week to 99 and were 85 below the number in the corresponding period of last year. The causes of 18, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22.0, 19.7, and 22.3 per 1000 in the three preceding weeks, declined again to 17.9 per 1000 during the week ending Dec. 30th. During the 13 weeks of the quarter ending on that date the death-rate averaged 20.4 per 1000, the rates during the same period being 18.8 in London and 16.2 in Edinburgh. The 130 deaths of persons belonging to Dublin registered during the week under notice were 32 below the number in the preceding week and included seven which were referred to the principal infectious diseases, against eight, five, and seven in the three preceding weeks; of these, three resulted from "fever," two from diarrhoea, one from diphtheria, and one from whooping-cough, but not any from small-pox, measles, and scarlet fever. These seven deaths were equal to an annual rate of 1.0 per 1000, the death-rates from the principal infectious diseases last week being 1.6 in London and 0.9 in Edinburgh. The fatal cases of "fever," which had been two, one, and four in the three preceding weeks, declined again to three last week. The 130 deaths in Dublin last week included 18 of children under one year of age and 41 of persons aged 60 years and upwards; the deaths of infants were 13 fewer than the number in the preceding week, while those of elderly persons showed but a slight decline. Six inquest cases and six deaths from violence were registered, and 56, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Inspector-General of Hospitals and Fleets Herbert Mackay Ellis, K.H.P., Director-General of the Medical Department of the Royal Navy, has been granted the relative rank of Vice-Admiral in His Majesty's Fleet (dated Jan. 1st, 1906).

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Staff-Surgeon Henry Newport Stephens has been allowed to withdraw from His Majesty's Naval Service, with a gratuity.

The following appointments are notified:—Staff Surgeon W. J. Codrington to the *Isis*, on recommissioning; Surgeons: K. D. Bell to the *Isis*, on recommissioning; A. Bradley, lent to Portland Hospital; and W. T. Haydon to the *Actæon*.

ROYAL ARMY MEDICAL CORPS.

Major H. A. Hinge, adjutant of the dépôt and training school at Aldershot, is placed under orders for India. Colonel W. E. Saunders, C.B., R.A.M.C., is appointed to officiate as principal medical officer, Eastern Command, India, *vice* Surgeon-General W. L. Gubbins, C.B., proceeding home on leave. The following officers proceed to India for a tour of service this month: Lieutenant-Colonel A. E. Morris, Captain A. H. Waring, Lieutenant R. H. L. Corder, and Lieutenant R. P. Nash. Lieutenant A. A. Meaden is granted an extension of sick leave until March next. Captain J. J. W. Prescott, D.S.O.,

medical officer in charge of troops and of recruiting. Mutley Barracks, Plymouth.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Cinque Ports: Surgeon-Captain C. R. Skyrme resigns his commission (dated Dec. 30th, 1905).

Rifle Corps: 1st Volunteer Battalion, the Northumberland Fusiliers: Surgeon-Major D. Stewart is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated Dec. 30th, 1905). 2nd Volunteer Battalion, the King's (Liverpool Regiment): Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel G. Westby (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Liverpool Volunteer Infantry Brigade) resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Dec. 30th, 1905). 3rd Volunteer Battalion, the Lincolnshire Regiment: Surgeon-Lieutenant-Colonel F. J. Walker is granted the honorary rank of Surgeon-Colonel (dated Dec. 30th, 1905). 1st Volunteer Battalion, the Leicestershire Regiment: Surgeon-Lieutenant-Colonel R. B. Smith (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Leicester and Lincoln Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated Dec. 30th, 1905). 3rd Lanarkshire Volunteer Rifle Corps: Surgeon-Captain T. Forrest, to be Surgeon-Major (dated Dec. 30th, 1905). 3rd (Duke of Connaught's Own) Volunteer Battalion, the Hampshire Regiment: Surgeon-Major E. J. Hunter (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Hampshire Volunteer Infantry Brigade), to be Surgeon-Lieutenant-Colonel (dated June 13th, 1904). The undermentioned Surgeon-Lieutenant-Colonels are granted the honorary rank of Surgeon-Colonel:—O. Knott (dated Dec. 30th, 1905) and E. J. Hunter (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Hampshire Volunteer Infantry Brigade) (dated Dec. 30th, 1905). 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Major T. Philip to be Surgeon-Lieutenant-Colonel (dated Dec. 30th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lancaster and Border Bearer Company: Supernumerary Surgeon-Captain W. B. Cockill, from the 2nd (Westmoreland) Volunteer Battalion, the Border Regiment, to be Captain, and to command (dated Dec. 30th, 1905).

NEW YEAR HONOURS.

The King has appointed Surgeon-General Richard Browne, I.M.S., Surgeon-General with the Government of Madras, a Companion of the Order of the Indian Empire, and has awarded "the Kaisari-i-Hind Medal for Public Service in India" of the first class to Lieutenant-Colonel Robert Shore, I.M.S. (Bengal), Residency Surgeon, Mowar.

DEATHS IN THE SERVICES.

Captain James Valentine Roche, R.A.M.C., on Nov. 26th, 1905, through injuries received while riding in the recent Army Cup race at Lucknow, India. He entered the service in 1901 and was promoted captain in 1904. He served in the South African war in 1901-02, including operations in the Transvaal, Orange River Colony, and Cape Colony (medal with five clasps). The deceased officer was 29 years of age.

GERMANY AND THE JAPANESE PRISONERS OF WAR RETURNING FROM RUSSIA.

The Japanese newspapers are full of praise for the exceptional kindness shown by the German Red Cross Society to the Japanese prisoners of war, who, to the number of nearly 2000, recently passed through Germany en route for home via Hamburg, after one and a half years' imprisonment in Russia. The German arrangements for the transport and care of the wounded, of whom there were 64, were uniformly excellent. On the Prussian State railways there are four classes of carriages, those of the fourth class being without compartments and having a wooden bench fixed round the interior, the entrances being at either end. For the first time the experiment was tried of fitting up fourth class carriages as hospital wagons with complete success. These carriages are connected with the heating apparatus of the train and therefore make far better hospital wagons than the goods trucks which were formerly used for the purpose and which in winter time could only be heated in an unsatisfactory manner by means of portable stoves. The German Red Cross Society sent men to Wirballen on the Russian frontier to fit up the hospital carriages of the train which was to convey

the prisoners to Hamburg, where they were to embark on specially chartered steamers for Japan. These carriages were provided with beds of the so-called Linz-Weiller pattern placed one above another two deep, like sleeping berths on board ship, and a number of folding-tables, bedroom commodes, and bedpans were also supplied, together with a stock of lint, plaster, and other surgical dressing materials. Some of the men who were very seriously ill, suffering from pneumonia, pleurisy, and tuberculosis, travelled in a darkened carriage and were constantly attended by some of the 53 Japanese Red Cross male nurses who had accompanied the prisoners during their internment in Russia. Eight prisoners suffering from tuberculosis were placed in an isolated carriage and five of this number died before Berlin was reached. The remaining three stayed at Berlin, while their carriage was uncoupled to take them to Grabowsee, where they visited the sanatorium (*Lungenheilstätte*). At each station at which the train stopped on the line between Wirballen and Berlin German Red Cross attendants were waiting with food and delicacies of various kinds for the men. Some of the Japanese were very badly crippled through amputation; one man, indeed, had had both his legs and arms removed and another had lost his foot through frostbite sustained in the terrible severity of a Manchurian winter. This practical sympathy shown by the German Red Cross Society to sick and wounded foreigners passing through Germany is a good illustration of what such societies may do for the relief of suffering, the encouragement of international amity, and the benefit of the world at large.

THE NEW UNDER SECRETARY FOR WAR ON THE ARMY.

We are very glad to notice that the Earl of Portsmouth, speaking last week at a Liberal meeting in Hampshire, intimated that it would be the endeavour of the War Minister and himself to conduct War Office affairs as far as possible on non-party lines. As our readers know, THE LANCET has nothing to do with politics beyond desiring to see, of course, that all questions affecting the medical services and profession have due consideration and lead up to wise and statesmanlike conclusions regarding them. Lord Portsmouth said in the course of his speech that our efforts ought to be to make the army, so far as possible, part of the national life of the country. In its peculiar position, the nation must depend very largely upon its reserve forces which must be properly developed and encouraged. It was the intention of those in power at the War Office to do the best they could for the army, without fear or favour, and without regard to any party considerations.

POST-GRADUATE CLASSES IN MILITARY SURGERY: AN INTERESTING DEPARTURE.

Many members of the West London Medico-Chirurgical Society having expressed a wish for instruction in the special work of military surgeons so that they may be in a position to render aid in time of war, the Director-General of the Army Medical Department has arranged for a short course of lectures and demonstrations to be given at the West London Hospital on alternate Saturdays at 4 p.m., commencing on Jan. 20th. An endeavour will be made to give a broad and practical view of the subject without going too much into detail. Medical men residing in West London, whether members of the society or not, who may wish to attend the course, which is free, are requested to apply by letter to Mr. H. W. Chambers, 101, Goldhawk-road, London, W. The course is under the direction of Colonel H. E. R. James, R.A.M.C., superintendent of the Royal Army Medical College, and the size of the class will necessarily be limited.

TREATMENT OF MILITARY PATIENTS AT EXETER.

The Exeter Sanitary Committee has entered into an agreement with the military authorities for the reception of military patients suffering from infectious diseases at the Exeter Sanatorium. The military authorities are to pay 25s. weekly for each patient, 8s. for the removal or discharge of each case, and in case of death to defray the expenses of interment. The committee reserves to itself the right to refuse the admission of any patient if the sanatorium is full.

Lieutenant-Colonel R. H. Charles, I.M.S., professor of surgery at the Medical College, Calcutta, is specially attached to the suite of the Prince of Wales for his Royal Highness's Indian tour.

In connexion with proposals for the improvement of the food of the soldier, more particularly in the field, it has been decided to form a class for officers at the Army School of Cookery, Aldershot.

Correspondence.

"Audi alteram partem."

THE PROPOSED AMALGAMATION OF THE LONDON MEDICAL SOCIETIES.

To the Editors of THE LANCET.

SIRS,—Dr. G. Steele-Perkins has found a great mare's nest concerning the proposed amalgamation of the London medical societies, about which he wrote to you in your issue of Dec. 23rd last. He would not have done so had he asked any member of the general committee of representatives or any official of the Royal Medical and Chirurgical Society about the scheme. The report to which Dr. Steele-Perkins refers was a preliminary scheme which was referred to the various societies for their views. It was drawn up by representatives of all societies and certainly was not intended to favour any one society. It is the belief that the majority of members will become Fellows that augurs so well for the success of the scheme. On p. 4 it is expressly stated that "every member of the societies which amalgamate shall have the option of joining the new society," and on pp. 2 and 3 a reference is made to the expectation that many who are now only members of the joining societies will become Fellows of the new society.

It is proposed that the property of the new society shall be vested in the Fellows, who will consist at first of all members who are willing to pay 3 guineas annually, and Dr. Steele-Perkins is entirely in error in stating that the only Fellows will be those Fellows of the Royal Medical and Chirurgical Society who have already compounded their subscriptions.

Some of the inconsistencies of the tentative scheme to which Dr. Steele-Perkins draws attention will require consideration and adjustment later when the details will have to be worked out, such, e.g., as to what should be the subscription of a Fellow who has already compounded for an annual subscription of 1 guinea in a society; but these are of minor importance and can be kept till the new society is formed. Further consideration will, I feel sure, convince Dr. Steele-Perkins that his fears are unfounded and they certainly never occurred either to the general committee which drew up the scheme nor to the council of the society referred to that only suggested certain alterations in detail.

I am, Sirs, yours faithfully,

Portland place, W., Jan. 2nd, 1906.

G. NEWTON PITT.

SIR JOHN BATTY TUKE AND THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—The action of Sir John Batty Tuke in leaving the meeting of the General Medical Council on the occasion of the discussion on the Rusholme Dispensary has given rise to a misapprehension which might operate unfairly against his candidature for the Universities of St. Andrews and Edinburgh, and the Medico-Political Committee of the British Medical Association has instructed us to state the facts of the case. These are:—

1. That Sir John Batty Tuke left the meeting by special permission of the Chairman and at the request of the British Medical Association for the purpose of introducing to the President of the Local Government Board the deputation in support of the Public Health Bill prepared by the Association to give security of tenure to medical officers of health.
2. That this had been arranged before it was known that the discussion on the Rusholme Dispensary would be taken at that time.

The Central Council has given instructions that in the case of every Member of Parliament who has conspicuously supported or opposed the policy of the profession in Parliament, and is a candidate, particulars of his action should be furnished to each medical constituent. As this could not be

done by circular in the case of university constituencies, we take the present opportunity of making it known to the profession that Sir John Batty Tuke has supported the British Medical Association on every occasion on which such support has been sought.

We are, Sirs, yours faithfully,

R. O. BUIST,

Chairman of the Medico-Political Committee of the British Medical Association.

G. H. W. PARKINSON,

Chairman of the Public Health Committee of the British Medical Association.

ASSOCIATION OF MEDICAL MEN RECEIVING RESIDENT PATIENTS.

To the Editors of THE LANCET.

SIRS,—There is reason to believe that there are many medical practitioners in all parts of the country, particularly in health resorts, who have facilities for the reception of invalids into their houses for treatment. Such practitioners may not be aware that there has been in existence for some time a coöperative "Association of Medical Men Receiving Resident Patients" which it might be advantageous for them to join. Full particulars may be obtained from the honorary secretaries of the association, 18A, Hanover-street, Hanover-square, London, W., or Bodorgan Manor, Bournemouth.

I am, Sirs, yours faithfully,

Bournemouth, Dec. 23rd, 1905.

G. E. J. ORALLAN.

A CASE OF CLAY-COLOURED STOOLS WITHOUT JAUNDICE BUT ATTENDED WITH COPIOUS BILIOUS VOMIT.

To the Editors of THE LANCET.

SIRS,—After Mr. A. W. Mayo Robson's appeal to exact analyses the letters of Dr. P. J. Cammidge and Mr. F. A. Watkins come as a surprise. One naturally looked for figures, but none are forthcoming. Dr. Cammidge divides his results of analyses into six statements. Before dealing with them it is necessary to recall the precise question at issue. It is this. I have strongly disagreed with the opinion that "the characteristic white stools often seen in pancreatic disease in the absence of jaundice are their pale colour entirely to the solidification of the fat when the motion cools, although there may be a normal amount of bile entering the intestines." (The italics are mine.) With this kept in mind, three of Dr. Cammidge's six statements may be quickly dealt with. No. 1 proves nothing, for the excess of fat and defect of colour may both be due to a common cause, not one to the other. No. 2 proves nothing, for no one has suggested that the pale colour may not be partly due to the quantity of fat present or to its quality. No. 6 also proves nothing, for in such cases also pigment may be diminished.

The other three statements require more detailed scrutiny. No. 5 is indeed a quantitative statement but the essential comparison with the normal is omitted. The first part of this statement also is not in accordance with other observations to which I shall presently allude and the second part is opposed to the statement of Mr. Watkins, immediately below on the same page. No. 3 records a definite and interesting result but is immediately discounted by No. 4. No. 4 is the only instance in which Dr. Cammidge has made the essential comparison with the normal and it is noteworthy that, so far as it goes—for it, too, is incomplete—this statement tends to support my view, not Mr. Mayo Robson's. As the argument used is also the only argument brought forward by Mr. Watkins, which strictly applies to the point at issue, I may consider the two together. In Dr. Cammidge's words, "removal of the fat with ether leaves a residue similar to that obtained from normal faeces." If this means anything relevant to the present discussion it means that this residue contains a percentage of pigment similar to that contained in the residue from normal faeces. If this be so, then in the case cited by Dr. Cammidge, a little further on in his letter, where 90 per cent. of the dry weight of the faeces consisted of fat, leaving only 10 per cent. residue, there must have been a very notable diminution in the output of pigment, unless the faeces were remarkably excessive in bulk, of which no suggestion is made. For normal faeces contain about 15 per cent. of fat and therefore should leave 85 per

cent. of residue. In other words, bulk for bulk, normal faeces should contain, according to the above statement, eight and a half times more pigment than the faeces of this case. Unless, therefore, the fatty faeces were eight and a half times bulkier than the normal the output of pigment must have been less than normal. Does Dr. Cammidge suggest that they were so bulky as this? In the case I lately published their bulk was certainly nothing like so excessive. The statement with which I disagree therefore remains "non-proven," and I still think it mistaken.

On the other hand, the following supports my view. In THE LANCET of May 30th, 1903, p. 1497, will be found a very interesting paper by Dr. W. B. Cheadle on Acholia, defined as a condition of "absence of bile in the stools without jaundice or sign of obstruction to the biliary outflow from the ducts," therefore including all kinds of cases characterised by stools of this description. Analyses of the faeces in Dr. Cheadle's cases had been made by Dr. W. H. Willcox. Dr. Cheadle said, "In all cases bile pigment is deficient and in extreme and typical cases, where the stools appear white, no trace of it can be found. Moreover, in the most marked cases analysed by Dr. Willcox the bile acids were entirely absent also." In one of the cases quoted (Case 2) the stools contained at one time 49.65 per cent. of fat, whilst "bile pigment and bile acids were entirely absent." It is to be observed, however, that this case recovered, so that its exact pathology remains doubtful. Again, there is Sir Lauder Brunton's case quoted by Mr. Mayo Robson in his Hunterian lectures in 1904, in which Dr. Sidney Martin found only small quantities of unaltered biliverdin and "only an indication of biliary acids" in the white motions. The fact probably is that the pale colour of the faeces, in cases such as have been discussed, depends partly on the excess of light-coloured fat present, partly, as Dr. Cammidge suggests, on the crystalline peculiarities of the fat, and partly on a diminution in the output of the faecal pigment. The exact part played by each of these factors is, no doubt, different in different cases. What the real explanation of this diminution in the pigment is cannot be now positively stated. It evidently occurs when abundant bile is entering the alimentary canal. Dr. J. T. Walker's suggestion that defect of pancreatic secretion may have something to do with it is well worthy of attention. There is one thing which, at all events, I think that this discussion has brought out clearly (especially some curious facts mentioned by Mr. Watkins)—viz., that the whole subject of faecal pigment is in need of re-investigation. When that is undertaken I hope that Dr. Walker's theory will not be lost sight of. With apologies for the unavoidable length of this letter,

I am, Sirs, yours faithfully,

Exeter, Dec. 30th, 1905.

W. GORDON.

VENTRAL FIXATION OF THE UTERUS BY A NEW METHOD.

To the Editors of THE LANCET.

SIRS,—If Mr. W. G. Richardson will consult THE LANCET of Feb. 12th, 1898, p. 429, he will find the description of an operation almost identical with the one which he publishes in your columns last week, written by Mr. C. J. Bond of Leicester. This operation I have seen done many times with excellent results both at Leicester and at the Bradford Infirmary.

I am, Sirs, yours faithfully,

Girlington, Bradford, Dec. 27th, 1905.

J. PHILLIPS.

MODERN MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—I think "L.S.A." is hardly fair in his very sweeping condemnation of modern medical teaching. Nowadays, certainly, the enormous amount of knowledge which can, and must, be obtained solely by clinical work under the guidance of a properly qualified teacher has tended to crowd out "treatment" from the systematic courses of study pursued in the medical schools. The courses of study pursued in the medical schools, by medical registrar, hammering away at the methods by which disease is recognised and differentiated—and which disease is recognised and differentiated—and "L.S.A." will himself admit that it is as well to have some

sort of an idea of one's patient's ailment before the administration of any drug—has little or no time to deal with the treatment of the particular case, and the student recognises this. He is also aware that the examiners at the colleges and the universities have an awkward habit of following up their examination-in-chief by the question "And how would you treat it?" As ward clerks this was common knowledge to us, and we applied the remedy by following our own, and other, house physicians on their morning rounds. We saw what was given, what happened or what did not happen, and we asked the reason.

The house physician, being a man who was endeavouring to make the most of his time, welcomed the amateur censorship and found that the necessity for explanation implied a corresponding necessary cogitation before applying any of the pharmaceutical remedies of his calling. If the physician, on his rounds, saw fit to change the treatment, he was forced, if merely in justice to his house physician, to explain why he had done so to his class. So it arose that the house physician taught treatment.

I am only a recently qualified general practitioner and therefore hasten to bow to the undoubted practical experience of "L.S.A." Still I cannot agree that the Apothecaries' Hall examinations demand a greater knowledge of drugs and their applications than the tests applied by other examining bodies. I have the M.R.O.S., L.R.C.P., and the B.S. and M.D. Lond. I have not taken the L.S.A. but I have successfully "coached" for that diploma. I have held the usual appointments, including house physician at a great London hospital, and can therefore place myself on all fours with "L.S.A.'s" son. Yet I should be false were I to deny the enormous amount of practical treatment that I learnt in my various appointments.

As a house physician I did not have to worry with blood counts and the like. They were the province of the clinical clerks. I was therefore free to apply myself simply and solely to treatment, and this I hold is one of the inestimable advantages of a house physicianship at a big hospital. In my turn I had my volunteer class of fifth years' men and we argued and wrangled over treatment. I had to be sure of my facts; I was always liable to the direct negative from one of my "class" and it was never policy to attempt to bluff. Anything new was given a fair trial and dropped or continued according to results.

I admit there is a class of men which considers that the ends of medical science are met when once the lesion is located with accuracy. But this class is small and learns wisdom later. The great bulk of students at the present time fully realise the importance of treatment and do their best to acquire some working knowledge. As to the house staff, how often has one heard the caution from one house physician to another who is filling his friend's spare beds: "Don't send me in any curiosities. Send me in something I can treat." Apologising for a prolix and, I fear, egotistical letter,

I am, Sirs, yours faithfully,

Jan. 1st, 1906.

GENERAL PRACTITIONER.

THE BATTLE OF THE CLUBS.

(FROM OUR SPECIAL COMMISSIONER.)

Medical Scandal at Macclesfield.—Local Economic Conditions.—No Improvement for Three-quarters of a Century.—Medical Officers paid 10d. per Member per Year.—Contract Work at Less than a Farthing per Week.

OF all the deplorable descriptions of the degradation wrought in the ranks of the medical profession by club practice or the contract system the following account of the state of affairs at Macclesfield will probably rank among the worst. This town used to be a prosperous silk manufacturing centre and some 75 years ago an individual called Fergusson started a burial club for the advantage of the operatives engaged in that trade. Any student of political economy knows what were the conditions of the workers in factories during the earlier half of the nineteenth century; how the abuses then prevalent led up to the Chartist agitation, to the Peterloo massacre, and finally resulted in far-reaching and beneficent factory and sanitary legislation. It was on July 10th, 1831, that the Macclesfield General Burial Society was established and on Jan. 11th, 1905, this society issued its seventy-third annual report and balance-sheet. It had 6115

members in 1904. Then there is a Burial Society No. 2, which has 5300 members and was established in 1833. In the face of these dates it is only natural to observe that contracts made with members of the medical profession three-quarters of a century ago cannot be considered as satisfactory under the altered conditions which prevail to-day. What club practice was when first these burial societies were created I am unable to say, but a graphic description was given to me by an old resident of how the system worked some 40 years ago. In those days the burial clubs employed two elderly practitioners who had seen some 60 summers. Then there was an army surgeon who was going downhill very rapidly and another practitioner who was a perfect gentleman. Everyone spoke well of the latter; his manners were unimpeachable, he was a general favourite, but he was almost always drunk. He was much in demand in cases of accouchement. All that was necessary was to send for him in good time, provide a sofa so that he might lie down and have a sound sleep, have a cup of strong tea ready for him when he awoke, and then he would be able to attend to the case with the greatest skill while charming everyone by his extremely refined, courteous, and agreeable manners.

In those days unqualified assistants were allowed and wonderful stories are told of their prowess and popularity. The curious thing is that at least one of these unqualified assistants seems to have had a better sense of standing up for his rights than the medical men engaged in the same service. He did think that the extent to which he should be exploited by the burial societies should have a limit, so he refused to go out or to see any patient after 8 P.M. Thus he left the night work for the fully qualified practitioners. Then there was another assistant who had been taken out of one of the mills. He was an uneducated workman, but in time he picked up a little knowledge, became very popular, and it is said that he attended more midwifery cases than any qualified practitioner in the town. Such was the state of club practice at Macclesfield some 30 or 40 years ago, and the younger practitioners when they saw that the club work was in the hands of such men thought that they would leave it to die a natural death. This, however, was a great mistake, for when the elderly medical officers died the burial clubs imported new and more active men who strengthened their position. Also the hopes of improving the conditions of club practice were soon to be gravely affected by the decline of the silk trade. This commenced in 1850 and it became evident that in England, where there are no silkworms and no silk, the industry could not compete with more favoured localities such as Lyons. Practically silk-throwing is dead, the hand loom no longer pays, and at Macclesfield imported manufactured silk can be bought for about the same price as the raw material. Indeed, Macclesfield would have been completely ruined but for some efforts that were made to start other industries. There are some shirt manufacturers and foreign silks are converted into blouses but this is all work for women and, indeed, at Macclesfield the women have far better opportunities of working than the men. There is, it is true, one cotton mill which employs men and women. In these circumstances, of course, the wages earned are very low. Women are always underpaid and the competition between the men for the little work that they can do is so keen that there is no difficulty in keeping their wages down, excepting, of course, the one instance where the well-organised cotton trade is concerned.

Not only are wages much lower and a great number of the men permanently unemployed but it is urged that provisions are much dearer. This, of course, is quite contrary to the experience of large towns such as London, Liverpool, &c. But in a rural district the poultry, eggs, milk, butter, and the meat from the local killing can now, with the aid of the railways, be sent to other than the local market, and therefore those who used to live on what was produced in their immediate vicinity would find living dearer. In any case this is one of the arguments given to explain why the medical practitioners of Macclesfield had not succeeded in improving their position. There was one short period, however, of extraordinary prosperity; this was during the Franco-German war of 1870-71. The French silk trade was then paralysed and orders flowed into Macclesfield. The trade went up by leaps and bounds. Many manufacturers abandoned their legitimate business and launched forth in all manner of new branches, which was imprudent for the boom was not likely to last long. Workmen at that time were sometimes able to earn as much as

£2 in three days and a few found this sufficient to enable them to devote the remaining four days of the week to drinking. There was not much work for the club medical officers to do at that time as the work people could all afford to consult private practitioners and to pay proper fees. The club medical officers, therefore, did not complain because they received the same pay and had less work. The independent practitioners did not complain because they had a large increase of private patients. Both the one and the other failed to see that it was during this period of great prosperity that a successful effort might have been made to improve the conditions of contract work. The golden opportunity was lost, the Franco-German war came to an end, the silk looms at Lyons began to work again, the trade once more left Macclesfield, and it has gone down and down ever since. Thus matters have remained as they were and there has been hardly any change whatever.

Now that I have reached the point when I can no longer defer stating what is this position that has not been altered during so long a course of years, I feel overwhelmed with all manner of doubts and hesitation. It seems so utterly incredible that I find it very difficult to believe the evidence before my eyes and therefore can hardly expect others to do so. In the course of these investigations a few clubs have been discovered here and there which pay their medical officers 3s. and sometimes only 2s. 6d. per member per annum, though 4s. or 4s. 4d. is generally considered the minimum. What, then, can be said of Macclesfield? Will it be credited that at Macclesfield the medical officer of the General Burial Society receives from each member of this club, whom he is bound to attend in case of sickness, a payment of only 10d. per annum! Yet here is the proof of this astounding fact. The burial club in question has printed and issued its seventy-third annual report. This official document is dated Jan. 11th, 1905, and contains on the third page the following: "Number of members at the end of 1903, 6212; joined, 148; withdrawn, 142; died, 103; leaving a total membership of 6115." Then the accounts for every quarter are published, followed by a summary of the whole year. From these it appears that the medical officer was paid £254 13s. 7d. This is equal to 61,123 pennies. If these pennies be divided by the 6115 members it will be seen that it comes almost precisely to 10d. per member. Burial Society No. 2 has also published a report for the year 1904. This is its seventy-second annual report and it states that its medical officers were paid the sum of £200 2s. during the year. Unfortunately, there is no account given as to the total number of members belonging to this society but I am very creditably informed that there are 5300 members. If this is correct then the rate of payment for medical attendance on the members of Burial Society No. 2 is even lower than that of the General Burial Society. The sum paid, £200 2s., is equal to 48,028 pennies, which, divided by the 5300 members, make almost precisely 9d. per annum per member. For each 9d. the medical officer has to be responsible for the supplying of proper medical attendance during an entire year to the individual who has disbursed the 9d. For less than 1d. a month, indeed, for only 3d. per month, the medical officer is day and night at the beck and call of the individual who pays him less than 1d. per week. If that individual chooses to fancy that there is something the matter with him the medical officer is obliged to see the supposed patient as often as may be necessary.

How medical men could possibly have been induced to assent to such terms seems as incredible as it is difficult to explain. Probably these terms were accepted when economic conditions were utterly different to what they are now and have never been altered since. In most societies and even in the case of speculative insurance companies where medical aid is provided the members are charged 1d. a week for such aid and this over and above the subscription which they pay for other benefits, such as sick allowance, burial allowance, &c. These Macclesfield societies, however, work on the basis that 1d. a week is to cover everything and even then they give their members four weeks' holidays per annum. Therefore, there are only 48 collections of 1d., which makes 4s. per annum, instead of the usual 52 weekly collections, yielding 4s. 4d. in the year. Then, the system was to have so many collections for each purpose. Thus in 1904 the General Burial Society had 52 collections for their burial account, ten collections for their medical account, and six collections for their management account.

As the payment is 1*d.* per week the fact that there were ten collections for the medical account helps to confirm the statement made above that the medical officer only receives 10*d.* a year for each person whom he has on his books. If in spite of the smallness of the sum the total income from this source amounted, as already stated, to £254 13*s.* 7*d.*, this is only due to the fact that the medical officer had more than double the number of persons on his books than should be allowed. This, indeed, it is that constitutes the principal danger and scandal of the system. For anything like an income to be made by a medical practitioner when each person on his book contributes less than 4*d.* per week, the number of persons so inscribed must of necessity be far greater than any one medical practitioner can attend properly. Therefore, is it not a degradation of the profession to accept such conditions? Might not the question be put to the General Medical Council? Is it not "infamous in the professional sense" for a medical practitioner to contract to attend professionally on members of a club whenever called if the remuneration given is only equal for each person to about three-quarters of a farthing per week? What sort of professional dignity can a medical practitioner maintain towards a patient from whom he accepts a payment of three-quarters of a farthing per week? Does not the dignity of medical science make it imperative that such terms should be refused and treated as an insult offered to the profession.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday Fund.

THIS year's collection for the above Fund reaches a total which has only been surpassed once—viz., in 1878, when a special collection was made for the Queen's Hospital. This year's collection totalled £5900 0*s.* 7*d.* Church collections, exclusive of allocated donations and subscriptions, amounted to £4667 7*s.* 6*d.* and specially allocated donations to £1119 4*s.* 7*d.* Of the special allocations £244 14*s.* 8*d.* went to the Queen's Hospital and £202 0*s.* 6*d.* to the General Hospital. The expenses of the collection were £396 18*s.* 7*d.*, leaving an amount available for distribution of £5503 2*s.* The Lord Mayor, in moving the approval and adoption of the accounts, deprecated the practice adopted by a few congregations of ear-marking some portion of the collection as a subscription for which tickets were expected from the charities. He ventured to say that the more collections were handed over as an entirely free gift without any conditions the more the original object for which the fund was established would be carried out. He also thought that another year more consideration should be shown to the minor charities, that the amounts by which some of these benefited were not commensurate with the good that they were doing. The honorary lay secretary in reply to a question stated that the whole collection should be treated as a free gift from the churches of the city to the hospitals in recognition of the work they did. No tickets were to be expected in return for the collections.

Birmingham Distress Committee.

The general purposes subcommittee of the statutory distress committee has met and has decided to open a municipal labour bureau and to invite the unemployed to register their names. Arrangements have been made with the estates committee and the drainage board to employ as many men as work can be found for. The total number of applicants up to date is 538. This number out of a population of more than 500,000 is by no means large and seems to indicate that the amount of distress in Birmingham is not so acute as it is in many other towns. It should, however, be stated that only those unemployed are registered (1) who are willing to work but are temporarily prevented by causes over which they have no control; (2) who are of good character; (3) who have been resident in the city for the past twelve months; and (4) who have not received Poor-law relief within that time. The vast majority of the applicants are outdoor workers and unskilled labourers. Only one woman, a charwoman, has applied. The distress committee at Smethwick has decided to open a stoneyard in committee for the unemployed. It has already received 70 applications for relief.

Coventry and Warwickshire Hospital.

The annual report of the Coventry and Warwickshire Hospital states that 995 in-patients had been treated during the year, as against 913 in the previous year, and 8314 out-patients, as against 8269. There has been a great strain on the accommodation of the institution and in view of that there is an urgent need for greater capacity. For the extension scheme the authorities have already got £11,000—about one-third of the money required. An appeal was made for further annual subscriptions. There had been a notable increase of £325 in the amount received from the Hospital Saturday Fund. The Earl of Craven was elected president in succession to the late Lord Leigh.

Treatment of the Feeble-minded in Birmingham.

The Birmingham, Aston, and King's Norton joint Poor-law establishment committee has adopted a scheme for the treatment of epileptics and feeble-minded. It proposes to erect at once three houses for women and three houses for men, each house to accommodate 36 patients, a total of 216. With a few alterations and the addition of a suitable kitchen Mounthall Hall can be made to serve as "administrative quarters" until the number of patients at the colony exceeds 210. The complete plans provide for seven houses for women and seven for men.

Welsh Water and Galvanised Kettles.

The health committee of the city council has had under consideration certain galvanised kettles which are now in common use throughout Birmingham. The medical officer of health has made investigations and has found that any pure soft water acts on these kettles with great vigour and dissolves so much of the zinc from the galvanising as to make the water harmful and objectionable. The committee has passed a resolution approving of two circulars which the medical officer of health has been instructed to publish. The first is to be sent to kettle manufacturers asking them to call in any kettles which they may have distributed with a view of preventing the sale of them within the city, and the second circular is to be sent to ironmongers and others requesting them not to sell any kettles having a galvanised zinc coating. Enamelled or tinned kettles are recommended by the committee but from some correspondence in the local papers it would seem that the former are also open to objection.

The Birmingham Rowton Houses.

The third annual general meeting of the shareholders of the Birmingham Rowton Houses, Limited, has lately been held at the Rowton House in Moseley-street. The report for the year stated that the daily average number of residents in March was 317, while in October it was 630. The profit for the first seven months was £694 16*s.* 11*d.*, and the directors hoped, but did not promise, that they would be able to pay a dividend next year. The directors intend to start a midday dinner and will supply a first-class meal at a cost of 6*d.* A weekly series of concerts has been instituted and has been greatly appreciated by the residents. It was mentioned that the men whom they got in the house were very similar to those in the London houses except that the Birmingham men were particularly fond of cooking their own food.

Jan. 2nd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Public Baths.

FOR many years Manchester has been interested in making provision for bathers and when the Victoria baths and the Moss Side baths are completed there will be 25 swimming baths, 497 wash baths, three Turkish baths, one Russian bath, and two public wash houses. Although a port Manchester cannot boast of the fitness of her waterway for swimming exercises. There are no sheets of water available, so that the youths of the city have to make use of the baths if they want to learn to swim. The total capital outlay by the corporation on these baths has been £157,798. This is exclusive of the expenditure on the Gorton, Newton Heath, and Whitworth baths before the respective districts became included in the city. The cost of the Victoria baths, £40,654, and of the Bradford baths, £3811, has also been excluded. There were 1,220,472 bathers for the year ending Sept. 30th, an increase of more than 31,000 as compared with

the previous year. No new swimming baths were opened between 1897 and 1905 and during that time the number of bathers has increased from 133,152 to 575,180. The number of school children using the baths increases year by year and many learn to swim. The proportion of the population who can swim will compare favourably with that of many places on the coast. There are life-saving classes and awards are given in the shape of season tickets. Last year 342 awards were given as against 582 in 1904. The cause of the decrease last year is not apparent. Appeals continue to be made still from some of the populous districts for baths and wash houses on more modest lines than the costly—many think far too costly—buildings on which tens of thousands of pounds have been lavished. It is good that Manchester should be well provided with swimming baths, for it is a smoke-begrimed city, but the actual possibilities of cleanliness for the men, women, and children of the crowded tenements in the "mean streets" and for the cleansing of their malodorous clothing are better met by the more humble, but for them more useful, cottage baths and wash houses which these poor folks can enter without shame and shrinking.

Requests to Medical Charities.

It was mentioned a short time since that Mr. A. W. Mills, a well-known architect in Manchester, left £4000 to the Owens College for a permanent endowment, this, of course, not being strictly medical, and £3000 to the Manchester Royal Infirmary and Dispensary. He also left £500 each to St. Mary's Hospital, to the Altrincham Provident Dispensary, to the Manchester Hospital for Consumption and Throat Diseases, and to the Hospital for Incurables at Mauldeth Hall. Besides these bequests to medical charities, he left £4000 to the Manchester Grammar School for scholarships for boys, tenable at Oxford or Cambridge, and £500 to the Architects' Benevolent Society.

Workhouse Inmates and Razors.

An inquest was held on Dec. 28th, 1905, on the body of a man who had been in hospital since June suffering from pulmonary tuberculosis and on Christmas Day attempted to cut his throat with a razor. The medical officer said that the slight wound in his throat had no effect in hastening the man's death which was due to pulmonary tuberculosis. The master of the workhouse stated that it was against the rules of the house for inmates to shave themselves. Razors, knives, or anything of the sort were taken from them but it was impossible to prevent friends giving them razors which they hide. This seems likely enough when, as the master said, on one occasion there were nearly 2000 visitors. The point of interest in this case is the suggestion that the attempt at suicide might have been brought about by a sad occurrence that took place recently. A nurse was suspected, rightly or wrongly, of stealing and committed suicide by throwing herself from a window, and the coroner asked the medical officer if he thought it had had any effect on the patients. Dr. Wright replied that it might have preyed on the minds of a few. He further said, in reply to the coroner, that the officials would take all possible precautions.

Anthrax at Bradford.

The importance of perfecting the processes for the disinfection of the raw materials containing the germs giving rise to anthrax is emphasized by the fact that this disease has caused seven deaths at Bradford within a few weeks. There have never been so many cases in so short a time in Bradford.

Jan. 2nd.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Leeds Public Dispensary.

THE election committee of the Leeds Public Dispensary has made the following appointments:—Honorary surgeon in charge of diseases of the throat and nose, Mr. A. D. Sharp, M.D. Birm., F.R.C.S. Edin.; honorary medical officers in charge of medical cases, Mr. Sydney Clark, L.R.C.P. Lond., M.R.C.S. Eng., and Mr. J. Gordon Sharp, M.D. Edin.; honorary medical officers in charge of surgical cases, Mr. W. McGregor Young, N.A., M.D., C.M. Glasg., and Mr. A. Mackenzie, M.A., M.B., D.C. Cantab. The four last-named gentlemen will be in charge of the southern branch of the

institution which is to be developed as a consequence of the taking over of the Southern Dispensary by the older institution.

A Point in the Sale of Poisons.

The decision of the Leeds stipendiary magistrate in regard to the sale of Rankin's ointment, which contains veratrin, has not been sustained on appeal to the Divisional Court of the King's Bench Division. The stipendiary pronounced his reasoned judgment on May 2nd and in convicting the defendants he stated that it had been established by a series of decisions culminating in a judgment of the Court of Appeal that the statute applied in the case of a mixture or compound where a scheduled poison constituted one factor in the composition of the article sold. He declined to accept the argument that all vermin-killers, whatever their constituent poisons, must be deemed to be in Part II. of the schedule, and held that it was consistent with the resolution of the Pharmaceutical Council in 1869 to hold that vermin-killers containing poisons in Part I. fell within Part I. For the defence it had been contended that compounds containing poisonous alkaloids did not come within Part I. of the schedule of the Act but were within Part II. and could therefore be sold to an unknown person if properly labelled "poison." The Lord Chief Justice, while agreeing that in certain cases the selling of a compound containing a poison was the same as selling the poison itself, considered that in this case the compound in question came within the second part of the schedule and he ruled that the conviction could not be maintained. Justices Lawrance and Ridley concurred and the appeal was allowed with costs. The judgments of the Leeds stipendiary in the cases of the selling of Easton's syrup, which he pronounced on the same date as the above, and against the defendants, have not been challenged and stand. In one of these cases it had been argued for the defence that Easton's syrup was nothing but a medicine and that it was "dispensed," because it was made up at the customer's request from Dr. Easton's prescription. The customer was, however, requested to sign the poison register. In the remaining two cases this request was not made. It is difficult for the non-legal mind to follow the reasoning which led to an appeal in the first class of cases—the Rankin's ointment cases, that is to say—and yet did not lead to an attempt to upset the judgment in the first case of the second group. Here the defence seems indeed to have been inconsistent, for if the chemist was merely "dispensing," as it was maintained, why was the customer called on to sign the poison book? The stipendiary found that the sale was not an act of dispensing and therefore this case looks very much on the same footing as those concerned with the sale of Rankin's ointment and one therefore in which the judgment might have been reversed on appeal.

Jan. 2nd.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Memorial to the late Dr. William Turnbull.

In a previous letter (July 29th, 1905) attention was drawn to the proposed memorial to the late Dr. W. Turnbull, formerly demonstrator of anatomy in the Durham University College of Medicine. The brass tablet then mentioned has now been appropriately erected in the dissecting-room, the scene of Dr. Turnbull's earnest labours. The inscription reads as follows:—

In Memory of
William Turnbull, M.B., B.S.,
Demonstrator of Anatomy in this College,
1835 to 1903.
Died Sept. 20th, 1903, aged 42 years.
This Tablet is erected by Fellow
Students and Friends.

The Borough of Tynemouth Water Scheme.

For many years past the water-supply of Tynemouth and district (the largest town in the area is North Shields) was in the hands of the North Shields Water Company but for a quarter of a century the Tynemouth corporation was unable to obtain water from the company for watering the streets, flushing sewers, and other sanitary purposes, and even the domestic supply was often inconveniently curtailed. To make amends for these too numerous deficiencies an extra supply had to be obtained from the Newcastle and Gateshead Water Company, but this could

only be secured under various restrictions under the special Acts of that company and, of course, at very considerable cost. Under the yoke of these disadvantages several attempts were made to place the Newcastle company under statutory obligations to supply the Tynemouth borough, but the Newcastle company was joined by the corporations of Newcastle and Gateshead in active resistance to any such scheme. Thus the Tynemouth borough had no alternative but to secure an independent supply. Accordingly in 1897 the corporation acquired the old company's works and in the following year procured from Parliament power to proceed with the scheme which is now being actively pushed forward. The Font is a mountain stream of pure water which flows down from the hills to join the river Coquet a few miles below the town of Rothbury. This stream is being dammed to form an artificial lake, the water from which has to travel a distance of 25 miles to the distributing reservoir at Moor House, near North Shields. The works at the Font include filter-beds and the long line of pipe-track necessary. The contract time for the completion of the works is July, 1907, but it is confidently expected that they will be in working order before that date. Already the borough is receiving overflow water to the extent of half of its daily supply and in wet weather the excess is enough to effect a saving of something like £100 a week in the lessened quantity required from the Newcastle Company. Financially the scheme is a costly one, having already involved expenditure amounting to £415,900, and the total is expected to reach £500,000 before completion of the work, this representing the cost for a rateable area of 63,000 inhabitants. To make the scheme a monetary success it will be necessary to sell the surplus water to the many small towns and villages within the possible supply area, including Ashington, Morpeth rural, Newbiggin and Tynemouth rural districts, and to this end terms are now being discussed. It is calculated that if all the surplus water be sold it will amount to an available profit of £4000 per annum, which would mean a reduction of 5½d. from an otherwise necessary 8d. water-rate.

Lecture on Aphasia and Cerebral Speech Mechanism.

On Dec. 7th Dr. Byrom Bramwell visited Newcastle-upon-Tyne as the guest of the Clinical Society and delivered in the College of Medicine a very well-attended lecture on Aphasia and Cerebral Speech Mechanism. The lecturer did not belie his reputation and delighted his large audience with a clear and highly interesting dissertation on this difficult subject, deriving much aid in making points clear by reference to a series of ingenious diagrams which he had brought with him. In moving a vote of thanks Professor George R. Murray said he had been privileged to hear many notable authorities lecture on aphasia, both in this country and abroad, but he had never listened to a more lucid disquisition. He also claimed some of the credit for the Newcastle School on the ground that Dr. Bramwell's study of the subject had been begun when he acted as physician to the Royal Infirmary in Newcastle. In seconding the motion Dr. Thomas Beattie remarked on the stimulating effect of such an address on those privileged to hear it. In reply, it was with no little feeling that Dr. Bramwell referred to his early connexion with Newcastle, and he went so far as to confess that he had often doubted the wisdom of the step he took when he left it. In the evening the guest was entertained at dinner at the County Hotel, there being a very large attendance.

Jan. 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Death of Mr. M. H. Greener, M.B., C.M. Glasg.

THE death of Dr. Michael Hindmarsh Greener on Dec. 26th, 1905, came as a great shock to the medical profession in Cardiff. He succumbed to an attack of broncho-pneumonia after an illness of less than a week's duration. Born in Alnwick in 1858 he graduated as M.B. and C.M. at the University of Glasgow in 1884 and almost at once began to practise in Cardiff. He was on the staff of the Cardiff Provident Dispensary and was honorary medical officer of the convalescent home at Dulwich House. He was buried at Dinas Cross in Pembrokeshire, where he had built a house and usually spent his holidays. He leaves a widow, a son, and a daughter to mourn their loss.

Legacies to Bristol Hospitals.

Miss Matilda Mercer of Clifton has left sums of £1000 to the Royal Infirmary and General Hospital, Bristol, and £200 to the Bristol Royal Hospital for Sick Children and Women and to the Clifton Dispensary. Subject to the life interest of her sister the Royal Infirmary and the General Hospital will each benefit to the extent of £4000; the Women and Children's Hospital will receive £1500; the Queen Victoria Jubilee Convalescent Home £3000; the Weston-super-Mare Sanatorium, the Bristol Orthopedic Hospital, and the Bristol Eye Hospital £1000 each; and the Clifton Dispensary £500.

Poor-law Relief in Bristol.

Reference has already been made¹ to the increasing amount of pauperism in the city of Bristol. The recommendations of a special committee appointed by the board of guardians to consider the question were discussed at a meeting of the board held on Dec. 29th. It was decided to establish a new relief depot and to increase the number of the relief committees with a view to make closer inquiries into the circumstances of applicants for relief. The proposal to appoint a superintendent relieving officer at a salary of £175 per annum was, however, negatived by 36 votes to 17 in spite of its advocacy by the Local Government Board inspector (Mr. E. B. Wethered) who was present at the meeting and who compared the cost of pauperism in the Bristol and Aston unions. The population of the former is 339,000 and of the latter 312,000. During the six months ending March 25th last the in-maintenance in Bristol cost £16,047 and in Aston £10,877, while during the same period the Bristol out-relief cost £20,759 and that at Aston only £4303.

Poor-law Guardians on the Vaccination Acts.

The subject of vaccination is frequently discussed at meetings of the Poor-law guardians in the West of England and at the meeting of the Devonport board held on Dec. 29th it was decided by a large majority to support the resolution which the Runcorn union is sending to the Local Government Board urging that "the principle of vaccination and revaccination in force before the Vaccination Act, 1863, came into operation should be reverted to."

Jan. 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh.

At the last ordinary meeting of the Royal College of Physicians of Edinburgh Dr. John Playfair was re-elected President of the College, Dr. Thomas S. Olouston, Vice-President, and Sir Thomas R. Fraser, Sir John Batty Tuke, Dr. Charles E. Underhill, Dr. James Ritobie, and Dr. R. W. Philip were elected to the Council with the President and Vice-President. The Council subsequently made the following appointments for the ensuing year: Dr. Peter A. Young, treasurer; Dr. Harry Rainy, secretary; Dr. D. Berry Hart, librarian; and Sir John Batty Tuke, curator of the research laboratory.—At an extraordinary meeting of the College held on Dec. 19th, the College unanimously appointed Dr. James O. Affleck and Dr. Charles E. Underhill to be representatives of the College on the board of management of the Royal Infirmary.

Two Glasgow Medical Practitioners Sued for £20,000.

It is with considerable interest that the medical profession in the West of Scotland has watched the progress in the Court of Session of an action brought against two Glasgow medical practitioners, and the verdict has been hailed with a certain amount of relief, although it is difficult to see how it could have been otherwise. The action was raised at the instance of a Clyde pilot who sued Dr. Marion Gilchrist, a practitioner in the West-end of Glasgow, and Mr. John Carswell, an expert in lunacy of the same city, for £10,000 each for alleged unprofessional conduct in granting certificates to the effect that the pursuer was of unsound mind and thereby causing his incarceration in Gartnavel Lunatic Asylum from September, 1903, to January, 1904. The pursuer's case was that the defenders acted negligently and unprofessionally and made no independent or adequate inquiry into the pursuer's statements or ascertained definitely the pursuer's mental condition and that they did not consult his own

¹ THE LANCET, Dec. 23rd, 1905, p. 1662.

medical adviser. Evidence was led at considerable length and amongst other witnesses two medical men, one of them Sir Henry D. Littlejohn, were called by the pursuer to give evidence as regards his sanity. The case dragged over many days and heavy expenses were incurred on both sides. Lord Pearson, before whom the case was tried, gave his decision to the effect that the certificate was not granted wrongfully or without due inquiry and examination, and that on the various dates on which the pursuer was separately examined by the defenders the pursuer was insane and suffering from an attack of subacute mania with homicidal tendency and was a proper patient for admission to, and detention in, Gartnavel Asylum. Although after the evidence on both sides had been heard there was no doubt in anyone's mind as to what the decision would be, yet there is reason for satisfaction that Lord Pearson in the terms of his judgment took up a position so precise and definite. Such a judgment is of the first importance to the public and to the medical profession. With the public, in its desire to safeguard its own interests and liberty, one has every sympathy, but with the medical practitioner in the discharge of duties of this kind one has still more sympathy. Had the decision in this case gone otherwise the medical practitioner dealing with a case of lunacy would have been on the horns of a dilemma. To grant a certificate might mean being sued for £10,000, while to withhold it, as would be his natural inclination, might mean a worse catastrophe in the shape of homicide, in which case he would not be held blameless. Dr. Gilchrist and Mr. Carswell are to be congratulated on the verdict in what must have been to them a very annoying and expensive lawsuit.

Population of Glasgow.

Dr. A. K. Chalmers, the city medical officer of health, has just issued his annual report with reference to the population of Glasgow. It is of an exceptionally interesting nature and deals at considerable length with the remarkable displacement that is going on throughout the city and suburbs. A significant fact mentioned is that the population of the city within the municipal area as at June last was 785,474, compared with 785,465 for the corresponding date in 1904, representing a difference of nine persons only in favour of the present year. In other words, the population has only been saved from a numerical reduction by reason of an increase in the number of persons resident in institutions and in consequence removed from opportunities of discharging many of the responsibilities of citizenship. This is the first natural interruption to a period of growth which has been continuous since 1887. It is noteworthy that in many of the suburban wards, on the other hand, there is a distinct increase. The depletion of the central districts is no doubt in large part due to increased facilities in travelling which enable the working man to live at a greater distance from his work and from the point of view of the general health and well-being of the community it is not to be deplored.

The Post Office and Bacteriological Specimens.

Recently an order was issued by the Postmaster-General in which conditions were laid down for the transmission by post of articles sent for medical examination or analysis. It is thought that one of these conditions will render useless all the arrangements of the sanitary department for expeditious dealing with the material sent for bacterial examination. A subcommittee has been appointed by the Glasgow corporation to take such steps in the interests of public health as may be thought advisable.

Jan. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation to Dr. J. C. Martin.

ON Christmas Day Dr. J. C. Martin, on his home-coming after a protracted illness, was presented by his numerous friends in Portrush with a silver casket suitably inscribed and containing 250 sovereigns.

Health of Belfast.

At a meeting of the city corporation of Belfast, held on Jan. 1st, reports were read which indicated, as the chairman of the public health committee stated, "that the present state of affairs in the catchment area (at Stoneyford water

reservoir) was a menace, but the corporation were not the sanitary authority for the district and they had no power to put the law in force." It appears that liquid matter from a manure heap at a farmhouse in the Stoneyford catchment area "flows over the surface of the ground into a water-course; at the other side of the dwelling house the cowshed is situated within a few feet of the stream. This stream is part of the Belfast water-supply" (report of inspector). In reference to a national school in the same district: "The privies are situated over an old watercourse which connects with a small stream that forms part of the Stoneyford water-supply. The liquid matter from the privies gets into the watercourse." Then as to another house: "There is a large quantity of manure lying on the brink of a stream; the liquid filth is flowing into the stream. This is a bad case of pollution. The cowshed, dwelling-house, and premises are in a filthy state." The inspector adds: "I may say I have made reports on above houses at intervals during the past seven years and the sanitary state of the premises is as bad as ever it was." One of the water commissioners present said that not a single drop of the impure matter got into the water-supply of Belfast. The water commissioners were not, in his opinion, to do Li-burn work (the catchment area is in the Lisburn district). It was not, he said, really their business whether these farms were in a sanitary condition or not. That was the duty of the local authority having charge of the district. In other words, a vile nuisance may exist in one of the catchment areas supplying the citizens of Belfast with water and typhoid fever may arise, as it did before, and owing to some small detail as to who has authority over the district hundreds of lives may be lost. It is hoped, as it was suggested at the council meeting, that the Local Government Board will interfere and order an inquiry and place the blame upon the proper authority. It is believed by many that the great epidemic of typhoid fever in Belfast several years ago took its origin from cases that were proved to have existed in this same catchment area, though the excuse then was, as now, that nothing got into the water reservoir. During the four weeks (Nov. 19th to Dec. 16th) reported upon to the city corporation of Belfast on Jan. 1st it was stated that the number of cases of infectious diseases notified was more numerous than in the last report, and while cases of typhoid fever and simple continued fever (whatever nondescript is meant by continued fever) have considerably increased, those from scarlet fever and erysipelas have decreased. Owing to the mildness of the season deaths from chest diseases still keep lower than usual. The death-rate was 20.1 per 1000 and considering the time of the year the health of Belfast may be described as fairly satisfactory.

Royal University of Ireland.

Judge Shaw, who has been a representative of Convocation on the Senate of the Royal University for the last 20 years, has written to the clerk of Convocation resigning his position, on the ground that "he cannot remain a member of a governing body which is liable to be defied and insulted by those whom it is supposed to govern and which either has, or believes it has, no power to repel or punish such defiance and insult."

Jan. 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hygienic Measures at Cherbourg.

THE admiral who is the maritime prefect of Cherbourg has recently issued an order containing the following regulations for the observance of hygienic measures. Firstly, it is of the greatest importance to prevent men by every possible means from drinking at the standpipes (*bornes-fontaines*) in the arsenal, the dockyard, or the town. In the arsenal the various shops will be supplied with distilled water from the ships in the port which will be sold off for such duty by the naval officer in charge (*major-général*). Depot No. 1 will supply boiled water to men working by themselves in the same way as it now does wine. The dietary of every mess is not to contain either salads or vegetables which are eaten raw, such as radishes or artichokes. All inhabited places are to be kept in a proper state of cleanliness and special care is to be exercised in the

only be secured under various restrictions under the special Acts of that company and, of course, at very considerable cost. Under the yoke of these disadvantages several attempts were made to place the Newcastle company under statutory obligations to supply the Tynemouth borough, but the Newcastle company was joined by the corporations of Newcastle and Gateshead in active resistance to any such scheme. Thus the Tynemouth borough had no alternative but to secure an independent supply. Accordingly in 1897 the corporation acquired the old company's works and in the following year procured from Parliament power to proceed with the scheme which is now being actively pushed forward. The Font is a mountain stream of pure water which flows down from the hills to join the river Coquet a few miles below the town of Rothbury. This stream is being dammed to form an artificial lake, the water from which has to travel a distance of 25 miles to the distributing reservoir at Moor House, near North Shields. The works at the Font include filter-beds and the long line of pipe-track necessary. The contract time for the completion of the works is July, 1907, but it is confidently expected that they will be in working order before that date. Already the borough is receiving overflow water to the extent of half of its daily supply and in wet weather the excess is enough to effect a saving of something like £100 a week in the lessened quantity required from the Newcastle Company. Financially the scheme is a costly one, having already involved expenditure amounting to £415,900, and the total is expected to reach £500,000 before completion of the work, this representing the cost for a rateable area of 63,000 inhabitants. To make the scheme a monetary success it will be necessary to sell the surplus water to the many small towns and villages within the possible supply area, including Ashington, Morpeth rural, Newbiggin and Tynemouth rural districts, and to this end terms are now being discussed. It is calculated that if all the surplus water be sold it will amount to an available profit of £4000 per annum, which would mean a reduction of 5½d. from an otherwise necessary 8d. water-rate.

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At the last ordinary meeting of the Royal College of Physicians of Edinburgh Dr. John Playfair was re-elected President of the College, Dr. Thomas S. Clouston, Vice-President, and Sir Thomas R. Fraser, Sir John Batty Tuke, Dr. Charles E. Underhill, Dr. James Ritchie, and Dr. R. W. Philip were elected to the Council with the President and Vice-President. The Council subsequently made the following appointments for the ensuing year: Dr. Peter A. Young, treasurer; Dr. Harry Rainy, secretary; Dr. D. Berry Hart, librarian; and Sir John Batty Tuke, curator of the research laboratory.—At an extraordinary meeting of the College held on Dec. 19th, the College unanimously appointed Dr. James O. Affleck and Dr. Charles E. Underhill to be representatives of the College on the board of management of the Royal Infirmary.

Two Glasgow Medical Practitioners Sued for £20,000.

It is with considerable interest that the medical profession in the West of Scotland has watched the progress in the Court of Session of an action brought against two Glasgow medical practitioners, and the verdict has been hailed with a certain amount of relief, although it is difficult to see how it could have been otherwise. The action was raised at the instance of a Clyde pilot who sued Dr. Marion Gilchrist, a practitioner in the West-end of Glasgow, and Mr. John Carswell, an expert in lunacy of the same city, for £10,000 each for alleged unprofessional conduct in granting certificates to the effect that the pursuer was of unsound mind and thereby causing his incarceration in Gartnavel Lunatic Asylum from September, 1903, to January, 1904. The pursuer's case was that the defenders acted negligently and unprofessionally and made no independent or adequate inquiry into the pursuer's statements or ascertained definitely the pursuer's mental condition and that they did not consult his own

cleaning of floors, which are to be brushed over with a 5 per cent. solution of chloride of lime, while the walls of rooms are to be whitewashed with lime-wash containing also chloride of lime. Men on leave are to be warned specially as to the danger of drinking town water and are also to be exhorted to avoid excess of any kind. Any man who appears to be ill, to be disinclined for work, or to have lost his appetite will be sent to the military hospital.

Death due to Cardiac Embolus while under an Anæsthetic.

At the meeting of the Society of Surgery held on Dec. 20th, 1905, M. Guinard showed the heart of a woman who was to have been operated upon for perimetritis, in which suppuration had occurred on the right side. The patient died quite suddenly on the table when she had just begun to take the chloroform. The apparatus used was Ricard's. Death was supposed to be due to the chloroform but a post-mortem examination revealed a large clot in the right ventricle, which clot was entangled in the chordæ tendinæ of the tricuspid valve. The origin of the clot was found to be in the hypogastric vein, just where it empties itself into the iliac vein. The clot had evidently been detached while the patient was being examined on the table or possibly in the pre-anæsthetic stage of excitement.

The Transmission of Contagious Diseases by School Books.

At the meeting of the Academy of Medicine held on Dec. 19th M. Josias read a paper founded on some inquiries made by M. Lop. This observer insisted upon the necessity for taking measures to prevent the transmission of infectious diseases by school books. There can be no doubt that scarlet fever is transmitted in this way and it is highly probable that tuberculosis, diphtheria, and other contagious diseases are so too. M. Lop proposes that at the end of each scholastic year books which are to be handed on to other scholars should be disinfected and all books in the possession of any child attacked by an infectious disease should also be disinfected. Exposure to high-pressure steam for 40 minutes is an excellent disinfectant but this method destroys bindings. The most practical method is that of Michel, which is based upon the use of the vapour of formic aldehyde.

Jan. 2nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Medical Examination of School Children.

THE report on the work of the medical officers of the Berlin municipal schools shows that, although these appointments are of comparatively recent creation, the duties to be performed have already become very extensive. These medical officers have to examine all the new pupils who enter the schools at the beginning of both the winter and the summer semesters, a task of magnitude, as each school district includes from seven to nine schools and the number of new pupils during the period under consideration was 34,562. Among these children 2927 were not admitted, some of the causes, together with the number of cases under each heading, being as follows: general debility, 1091; rachitis, 519; various mental defects, including idiocy, 300; scrofulosis, 184; nervous diseases, 81; and cardiac disease, 76. Of the other children 7041, or 20 per cent. of the total, suffered from chronic diseases which did not exclude them from the schools but, however, made a regular examination by the medical officers necessary. Among the backward and mentally defective children there were 801 for whom instruction in special classes was necessary, and of these 32 had to be afterwards transferred to asylums for idiots. The medical officers have also to deal with the general hygiene of their respective schools and the report gives their remarks on ventilation, heating, light, &c. On the subject of infectious diseases it is stated that many parents when their children suffer from infectious diseases intentionally notify the case to the school authorities as one of an ordinary character, the object of this being to save themselves trouble or the risk of injury to their business or the necessity of keeping the children a long time at home. If a medical man is not consulted the convalescent children return to school before they are free from infection, to the great danger of their class fellows. Concerning tuberculosis, the report states that in the majority of cases the parents are not aware that their

children are tuberculous on entering school and the discovery is first made by the school medical officer. The tuberculous children were examined at regular intervals and when necessity arose they were removed either to the seaside or to sanatoriums elsewhere. The number of tuberculous children is stated to be about 2000.

Sunday Rest for Medical Practitioners.

The so-called English Sunday—i.e., the closing of shops and offices all day on Sunday—is a relatively new institution in Germany and was legally enacted only about 15 years ago to the great satisfaction of all concerned. Recently some classes which do not come under the above law—pharmaceutical chemists, for instance—have taken measures by voluntary agreement to enjoy a more or less complete Sunday rest and the same movement has also found favour among the members of the medical profession. The question was recently discussed at a meeting of the Frankfurt Medical Society where Dr. Eiermann delivered an address on Sunday Rest for Medical Practitioners. He said that the great majority of general practitioners scarcely ever had an opportunity of taking a trip to the country with their families on Sundays and that if they did so there was always a possibility that a patient might require attendance during the temporary absence of his usual medical adviser and might subsequently not return to him. In order that the medical men might obtain this much-needed relaxation without inconveniencing the public Dr. Eiermann proposed that the city should be mapped out into 17 divisions corresponding to the police districts and that the medical men of each division should come to an arrangement whereby one of them in turn should remain at home on Sunday in readiness to attend urgent cases for the other practitioners. The names of the medical men on Sunday duty might be published every Saturday in the local newspapers and could be ascertained at the district police stations where the public would make inquiry in case of need. Moreover, one specialist in every branch for the whole town would be at home on Sundays. In order that the new system should work without prejudice to the medical profession it would be essential that the practitioners on Sunday duty should be under an obligation to give immediate notice to the usual medical attendant of the family to which he had been called and that he should absolutely refrain from any kind of after-treatment. The Frankfurt Medical Society unanimously agreed with these proposals and passed a resolution that the scheme for obtaining rest on Sunday should be introduced in Frankfurt from Jan. 1st, 1906. It is to be hoped that the medical men of other large towns will soon follow the example of the Frankfurt practitioners.

Dec. 30th, 1905.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Dispensaries in the Provinces.

THE General Sanitary Council of the Ottoman Empire, says the Turkish newspaper *İkdam*, published in Stamboul, is preparing a plan of regulations for the reorganisation of all the provincial dispensaries, the state of affairs of which is at present extremely unsatisfactory. Some regulations concerning the dispensaries and druggists' shops of the metropolis and surrounding districts are already in existence. They are, however, incomplete and lack that strict definiteness which is so absolutely necessary in the art of dispensing. Many localities in the provinces have no dispensaries at all. The way in which drugs are sold and administered there is a most deplorable one. All sorts of domestic remedies, very often of an injurious nature, are, of course, in great vogue. Very frequently old women play the rôle of a dispenser and of a medical adviser as well. Various amulets and talismans are supposed to possess great healing powers. Recitations from the Koran by a skilful "hodja" or "imam" in the presence of a bedridden patient are considered to be of much greater efficacy than any drug or any medical instruction, however dangerous the state of the diseased person may be. If the patient dies it is said to be due to an evil eye or to the influence of the "shitan" (devil). The few existing provincial dispensaries are in a state, as already indicated, which is far from satisfactory. In some it would be in vain to look

for a balance or any contrivance for measuring the exact dosage. The pharmacist simply trusts to the indications of his hand and eye. One can easily imagine the mischief that arises from such a mode of exercising the practice of dispensing. Frequently the district medical man asks in vain for the necessary drug. Frequently, also, the ingredients are so old as to have lost all their efficacy. The physicians have therefore very often to renounce prescribing the most indispensable ingredient and to adapt themselves as best they can to the scanty means at their disposal. The above-mentioned plan of regulations will try to remedy matters in a more or less energetic manner. The authorities will henceforward never allow anybody to open a dispensary unless he possesses sufficient means to furnish it with all the necessary requirements and to keep in stock the requisite amount of drugs. A sum of at least 100 Turkish liras (about £90 sterling) is being estimated by the General Sanitary Council as the lowest limit of means necessary to open a more or less respectably equipped dispensary. The municipal provincial authorities will also be instructed to make provisions for the opening of dispensaries in those localities where they do not now exist. Sanitary inspectors will visit twice yearly the provinces for the purpose of controlling the dispensaries and the dispensers. If the above plans are realised the public health of the Ottoman Empire will, of course, benefit very much indeed. I must, however, add that from a plan to its fulfilment there is always in Turkey a great, and very frequently insurmountable, distance.

The Expansion of the Italian Hospital.

Mr. Giapelli, the Italian Consul-General at Constantinople, has recently returned from Italy, where he occupied himself with a plan of building a new pavilion for tuberculous patients in connexion with the Italian Hospital at Tophané, a district of the metropolis adjoining the business quarter of Galata. The carefully elaborated designs of the projected pavilion have already been submitted to Mr. Speroni, a well-known architect from Milan, whose specialty is the building of hospitals. He proposes to make alterations in these designs and as soon as his own plans arrive here the erection of the pavilion will commence. The latter will be built in accordance with all the necessary requirements of modern hygiene and sanitation.

A New Turkish Hospital at Port Said.

The Ottoman Government intends to build a hospital for poor patients at Port Said. The site for this hospital has already been bought and orders have been given to prepare the necessary plans and designs. The Sultan takes a keen interest in its construction.

A New Veterinary Bacteriological Institute.

In view of the extension of the epizootic that is raging in the provinces of Trebizond, Castemouni, Aidin, Bronssa, Syria, Aleppo, and Beyrout the Ministry of Agriculture has asked the Sublime Porte for an authorisation to build in Constantinople a large veterinary bacteriological institute, as the existing laboratories are quite inadequate to meet the exigencies in furnishing serum in sufficient quantities to combat the outbreak.

A Strange "Remedy."

The inhabitants of Cassaba and Nif have recourse to a strange "remedy" for the epizootic raging in those places. The peasants there, to begin with, use every means possible at their disposal to prevent veterinary surgeons doing their work of prophylaxis and isolation. They oppose most energetically every mode of veterinary treatment and frequently insult and ill-treat the surgeon in the roughest manner. Their own domestic "remedy" for the prevention of contagion, a "remedy" in which they put absolute confidence, consists in the following. They kill a diseased animal and take out its liver and cut it into pieces. They then attach these latter with seven strings, all of a different colour, to the backs of the ears of the healthy animals which they henceforward consider to be safe from every contagion. Should an animal, however, die all the same the peasants attribute its death to the evil eye of the veterinary surgeon.

The First Snow.

After an exceptionally prolonged period of very mild weather we have got at last the first frost and the first snow. It is rare, however, for snow to last here. No sooner does it fall than it melts again. Severe winters are an exception at Constantinople.

Dec. 22nd, 1905.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A Substantial Compliment.

IN order to show their appreciation of his labours in keeping the city free from yellow fever during the recent outbreak in the Southern States, a purse of \$10,000, collected by popular subscription, was recently presented to Dr. Heber Jones, president of the Memphis (Tennessee), board of health. Dr. Jones sacrificed all other interests in order to be able to give his full time to the problems of quarantine and sanitation, and the value of his efforts is shown by the fact that, although many towns not far distant suffered, Memphis remained free from the disease.

Prize for Essay on Epilepsy.

A prize of \$300 has been offered by the National Association for the Study of Epilepsy for the best essay dealing with the etiology of that disease. All essays must be in the hands of the examining committee by Sept. 1st, 1906, and the award will be made in the following November. Physicians in any country may compete for the prize. Full information regarding the conditions of the award may be obtained from the president of the association, Dr. W. P. Spratling, superintendent of the Craig Colony for Epileptics, Sonyea, Livingston County, New York.

Football Accidents.

A wave of popular indignation has been sweeping over the entire country on account of the constantly growing annual record of serious and even fatal football casualties. In recent years the record of fatalities has increased at a rate that does not seem explicable merely on the ground of more general interest in the game, and for this season it is estimated that over a score of deaths and at least 150 grave injuries occurred. It is usually the comparatively untrained and immature players of undergraduate elevens who suffer, but many seasoned members of collegiate teams are also included in the list. Four deaths were due to body blows giving rise to internal injuries, six were ascribed to cerebral concussion, and three to spinal injuries. Blood poisoning and other injuries are responsible for the remaining fatal cases. The list of the seriously hurt includes many fractures of the limbs, ribs, and collar bone, injuries of the head and spine, and concussion of the brain. It is supposed that if accurate statistics could be compiled the total number of accidents of a more or less serious character would exceed 1000. This terrifying record is no doubt largely due to the fact that the rules of the game have been gradually so changed that as it is now played in this country it has but little resemblance to its English prototype. Open play has been reduced to a minimum and the mass formations in vogue not only of themselves render fatalities common but also afford undesirable opportunities for undetected fouls and brutality which are unfortunately far too common. In consequence of the popular disapproval of the present game the authorities of the more prominent colleges and universities are taking radical steps to purge the rules of their objectionable features, even President Roosevelt going so far as to take a hand in the matter. At Columbia University football has been abolished absolutely.

Medical Examinations in New York State.

A conference was recently held in Albany to consider the advisability of substituting a single State medical board for the three now representing respectively the regular, homœopathic, and eclectic schools of medicine. The representatives of the various State medical societies and State medical boards, after considerable discussion, finally decided to retain for the present the three boards of medical examiners now existing. The matter of arranging the academic and professional courses of instruction so as to render it possible to obtain the degrees of B.A. and M.D. in seven instead of eight years has been under consideration for some time and steps have already been taken in this direction. A committee was appointed at the present conference for the purpose of preparing the outline for a course of study to be introduced into the junior and senior years of the colleges, which should be satisfactory to the medical schools of the State and be accepted by them in lieu of their first year's work.

Dec. 27th, 1905.

cleaning of floors, which are to be brushed over with a 5 per cent. solution of chloride of lime, while the walls of rooms are to be whitewashed with lime-wash containing also chloride of lime. Men on leave are to be warned specially as to the danger of drinking town water and are also to be exhorted to avoid excess of any kind. Any man who appears to be ill, to be disinclined for work, or to have lost his appetite will be sent to the military hospital.

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children are tuberculous on entering school and the discovery is first made by the school medical officer. The tuberculous children were examined at regular intervals and when necessity arose they were removed either to the seaside or to sanatoriums elsewhere. The number of tuberculous children is stated to be about 2000.

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£100, and Fishmongers' Company, 25 guineas—Lord Ludlow, treasurer of St Bartholomew's Hospital, has received £100 from "A Friend" for the general funds of the hospital—By the will of Mr. Lewis James Seargeant of Tunbridge Wells £1000 are bequeathed to King Edward's Hospital Fund for London

ACTION FOR THE RECOVERY OF MEDICAL FEES.—At the Bristol county court on Dec 22nd, 1905, Mr. C. C. Pratt, surgeon, of Clifton, claimed £47 from a gentleman for medical attendance upon his mother-in-law. Evidence showed that the defendant and his wife placed the patient in charge of a lodging house keeper in Clifton, with instructions to procure for the old lady all that was necessary, including medical attendance. The defendant had paid Mr. Pratt a previous account for his attendance upon the patient. Judgment was given for the plaintiff.

THE ROYAL WEST OF ENGLAND SANATORIUM, WESTON-SUPER-MARE.—The Royal West of England Sanatorium at Weston-super-Mare is much appreciated by convalescent patients, for during the past year 2470 cases have been admitted, the daily average number of patients being nearly 200. It has recently been decided to build an annexe to the institution and this will be used by the nursing staff, and the wards which they at present occupy will give more accommodation to patients. It will also be utilised for any infectious case should an outbreak arise in the sanatorium. The committee has received £900 from a legacy which will be devoted towards the building and it is hoped that the additional sum required will be shortly forthcoming.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced—Dr. E. von Kusy, director of the sanitary department of the Austrian Ministry of the Interior.—Dr. Carlo Rosanelli, formerly extraordinary professor of general pathology in the University of Padua.—Dr. De Villo W. Harrington, professor of urinary diseases in the University of Buffalo.—Dr. Domenico Chiara, formerly professor of midwifery and gynecology in the Florence Medical School.—Dr. P. Abramichoff, *privat dozent* of dermatology and syphilography in the St Petersburg Military Medical Academy.—Dr. Cornelis Laendert van der Burg, a well known authority on the medico-geographical pathology of the Dutch East Indies. He was 65 years of age.—Dr. Sousa Reisfois, professor of medicine in the University of Coimbra.—Dr. Ambrose L. Ranney, professor of neurology and mental diseases in the University of Vermont, Burlington.—Dr. Hans Schmaus, extraordinary professor of pathological anatomy in the University of Munich, at the age of 43 years.—Dr. J. M. Holloway, formerly professor of clinical surgery in the Kentucky School of Medicine.—Dr. Hermann Rahl Rückhard, *privat dozent* of anatomy in the University of Berlin. He received the Iron Cross for his services during the Franco-German war. He was granted the title of professor in 1884 and was for some years a member of the military examination commission. His published works deal with a variety of subjects, especially military hygiene and malingering.—Dr. André Thourvenet, formerly professor of physiology in the Idmoges Medical School.—Dr. F. Hesch, extraordinary professor of ophthalmology in the University of Basle.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ANDERSON, R. W., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Practitioner under the Workers Compensation Act for Christchurch, New Zealand.
ANGELL, W. T., M.R.C.S. Eng., has been appointed Medical Officer to attend to the Destitute Persons and Aborigines within the District of Talinga, South Australia.
BARNARD, CHARLES EDWARD, M.D., Ch.M. Edin., has been appointed Officer of Health for the Shire of Creswick, Victoria, Australia.
BLIND, RICHARD KINGSTON, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for Arapiles Shire, Victoria, Australia.
BOYLE, H. EDWARD G., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anesthetist to the Paddington Green Children's Hospital.
CAMPELL, DONALD ALBERT, M.B. Melb., has been appointed Senior Medical Officer to the Hospital for the Insane, Larra Bend, Victoria, Australia.

DICKSON, FRANCIS HENRY, M.B., Ch.B. Edin., has been appointed Junior Assistant House Surgeon at the Stockport Infirmary.
GARRY, J. P., L.R.C.P. Edin., M.R.C.S., has been appointed District Medical Officer of the King's Norton Union.
HILL, ARTHUR MACHEN, M.B., Ch.B. Melb., has been appointed Medical Officer for Newstead Shire, Victoria, Australia, temporarily.
HOLLOWAY, JOSEPH THOMAS, M.B. Melb., has been appointed Medical Superintendent of the Ballarat Hospital for the Insane, Victoria, Australia, *pro tem*.
JAMES, WALTER TIMOTHY, M.B., Ch.B. Edin., has been appointed a District Medical Officer for the Aberavon (Cardiganshire) Union.
LIDDLER, PERCY HENRY, M.B., Ch.B. Melb., has been appointed Medical Officer for the Borough of Dariesford, Victoria, Australia.
OLLIPHANT, ROBERT, M.B., Ch.B. Vict., has been appointed Assistant House Surgeon to the Liverpool Infirmary for Children.
PHILLIPS, ALBERT JOHN WILLIAM, M.B., Ch.B. Melb., has been appointed Medical Superintendent to the Hospital for the Insane, Seeworth, Victoria, Australia.
SMITH, H. WATSON, M.B., Ch.B. Aberd., has been appointed Second Assistant Medical Officer to the Durham County Asylum, Winterton Ferryhill.
STEWART, J. M. I., M.B., Ch.M. Glasg., has been appointed Gynecologist for Out-patients at the Perth Hospital, West Australia.
THOMPSON, GEORGE WILLIAM, M.B. Edin., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon in charge of Out-patients at the French Hospital Shaftesbury Avenue.
WALTON, GEORGE ERNEST, B.A. Cantab., M.D., D.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Sick Children Great Ormond-street.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund street.—House Surgeon. Salary at rate of £70 per annum.
BIRMINGHAM, UNIVERSITY OF.—Demonstratorship in Anatomy. Stipend £175 per annum.
BRISTOL ROYAL INFIRMARY.—Pathologist, Bacteriologist, and Director of Clinical Laboratories. Salary £250 per annum.
BURNLEY, CORRYT BOBOTHOM.—Medical Officer of Health. Salary £500 per annum.
CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.
DERBYSHIRE ROYAL INFIRMARY.—Two House Surgeons, one House Physician, and one Assistant House Surgeon. Salary of three former £100 per annum, with apartments, board &c., of latter at rate of £60 per annum with apartments, board, &c.
GREAT LARMOUTH HOSPITAL.—House Surgeon. Salary £93 per annum, with board, lodging, and washing.
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.
MIDDELSBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.
NAPTHAL, NEAR ST ALBANS, HERTS, MIDDLESEX COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, washing, and attendance.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen's square, Bloomsbury, W.C.—Resident Medical Officer. Salary £100 per annum, with board and residence.
NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, attendance, and washing.
ROYAL FREE HOSPITAL, Gray's Inn road, W.C.—Medical Registrar, also a Surgical Registrar (females).
SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.
UNIVERSITY OF LONDON.—Examiners. One each in Medicine, in Surgery, and in Pathology.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.
YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BEATTON.—At The Cliffe, Bradford, on the 2nd January, 1906, the wife of Dr. Gilbert T. Beatton, of a daughter.
FARNFIELD.—On Dec. 25th, 1905 at Mere, Wilts the wife of William Walter Farnfield M.R.C.S. Eng., L.R.C.P. Lond. of a daughter.
FORBES.—On Dec. 27th 1905, at Oakwood-court, Kensington, W., the wife of J. Graham Forbes M.D. M.R.C.P., of a daughter.
SOPER.—On Dec. 29th 1905, at Clapham road S.W., the wife of Bertram Soper, L.R.C.P. (nee Frances Ash), of a son.

DEATHS.

DANIEL.—On Dec 30th 1905 at the Silver Birchess Eprom, William Clement Daniel, M.D., M.R.C.S., L.S.A., aged 60 years.
GRAY.—On 23th December at 92, Anerley Park, London S.E., Thomas Gray, M.R.C.S. Eng., and L.S.A. (formerly of 12, Montague place, Poplar, E.) in his 89th year.
GREENER.—On Dec. 25th, 1905, at Fallowden, Cathedral road, Cardiff, Michael Hindmarsh Greener, M.B., C.M.

A.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a Congregation on Dec. 14th, 1905, the following degrees were conferred:—

M.B.—A. W. Wakefield, Trinity; S. Borraddell-Smith, St. John's; W. R. Higgins, Calus; and C. F. Hardie, Queens'.

B.C.—A. W. Wakefield, Trinity; and S. Borraddell-Smith, St. John's.

At examinations for medical and surgical degrees held in Michaelmas term the following candidates were successful:—

FIRST EXAMINATION.

Part I., Chemistry and Physics.—C. K. Bancroft and H. G. Baynes, Trinity; F. S. Bedale, Clare; C. H. B. Booth, King's; A. W. Bourne, Downing; H. H. Brown, Calus; E. G. S. Cane, Jesus; R. G. Cant, B.A., King's; F. G. Chandler, Jesus; K. J. A. Davis, B.A., King's; H. T. Depree, Clare; C. Edo, King's; W. G. Emmett, Calus; A. G. Evans, Trinity; A. E. Evans, St. John's; G. W. B. Garrett, Calus; E. M. Grace, Christ's; L. S. M. Habich, St. John's; B. C. Haller, B.A., Trinity; J. B. Hance, Christ's; J. R. Henth, Trinity; A. E. Herman, King's; L. C. D. Irvine, Emmanuel; G. James, St. John's; A. O. Johnson, Downing; G. G. Johnstone, King's; T. H. Just, Trinity; H. D. Lander, Calus; G. H. S. Lettsworth, Pembroke; D. N. Macleod, Calus; J. R. Marrack, St. John's; W. G. Marsden, Emmanuel; G. W. Morrice and R. S. Morhead, Trinity; G. A. Morton, Queens'; B. A. Payne, Pembroke; H. B. Pope, Calus; E. Rayner, Pembroke; K. C. Rayner, Calus; A. H. Richardson, St. John's; W. D. Ross and S. H. Rouquette, King's; A. O. Roxburgh, Trinity; W. A. Russell, Emmanuel; H. B. G. Russell, Sidney Sussex; H. W. Scott, Clare; G. B. Sutton, Pembroke; R. H. Vicary, G. T. C. Watt, and J. B. A. Wymore, Calus; and C. R. Wright, Christ's.

Part II., Elementary Biology.—F. Ballard, Catharine; C. K. Bancroft, Trinity; F. S. Bedale, Clare; A. W. Bourne, Downing; E. G. S. Cane, Jesus; R. G. Cant, B.A., King's; F. G. Chandler, Jesus; K. J. A. Davis, B.A., King's; H. T. Depree, Clare; W. O. Emmett, Calus; A. G. Evans, Trinity; G. W. B. Garrett, Calus; A. Griffith-Williams and B. C. Haller, B.A., Trinity; T. L. Hardy, H. Selwyn; J. Harrison, B.A., Christ's; L. C. D. Irvine, Emmanuel; A. C. Johnson, Downing; G. G. Johnstone, King's; W. H. Jones, B.A., Christ's; T. H. Just, C. O. Kerby, and M. MacLaren, Trinity; W. G. Marsden, Emmanuel; O. de M. Marsh, Pembroke; G. A. Morton, Queens'; F. A. Powell, Trinity; E. Rayner, Pembroke; E. C. Rayner, Calus; W. J. Richardson, H. Selwyn; F. E. W. Rogers, Emmanuel; W. D. Ross and S. H. Rouquette, King's; A. C. Roxburgh, Trinity; W. A. Russell and C. M. Ryley, Emmanuel; L. W. K. Scargill, M.A., Trinity Hall; H. C. S. Starkey, Downing; J. L. M. Symms, Calus; and H. A. Williams, Emmanuel.

SECOND EXAMINATION.

Human Anatomy and Physiology.—J. W. Adams and G. E. Alderson, Calus; D. Allan, B.A., St. John's; F. R. Armitage, B.A., Pembroke; C. O. H. Bluns, Calus; H. Bowring, B.A., King's; W. Boye-Stones, B.A., Calus; R. D. D.-D. Brownson, B.A., St. John's; H. T. H. Butt, B.A., Christ's; F. G. Caley, B.A., Pembroke; W. N. Child, B.A., Christ's; A. J. Clark, King's; C. N. Cond, B.A., St. John's; M. Donaldson, B.A., Trinity; H. B. Elton, B.A., Calus; R. Fisher, Sidney Sussex; H. G. Fresh, B.A., St. John's; H. D. Gillies, B.A., Calus; A. H. Habgood, B.A., Jesus; W. Harman, B.A., Trinity; E. H. V. Hodge, B.A., Clare; W. C. Hodges, B.A., Trinity Hall; A. N. Hodges, Queens'; C. O. Holman, Calus; B. Hughes, B.A., H. Selwyn; H. D. Humphrys, B.A., E. M. Lauderdale, B.A., and R. J. B. Loney, Calus; G. K. McKerrrow, B.A., Clare; R. H. Mawhood, B.A., Trinity; R. M. Moore, B.A., St. John's; H. M. D. Nicoll and A. E. Rayner, B.A., Calus; H. G. Rice, St. John's; F. A. Roper, B.A., and E. N. Russell, Trinity; F. S. Seales, B.A., Jesus; A. L. H. Smith and H. C. Snell, B.A., Calus; H. S. S. Stiven, B.A., Trinity; L. B. C. Trotter, B.A., Clare; R. M. Vick, B.A., Jesus; C. St. A. Viriau, B.A., Calus; J. Walker, B.A., and W. E. Wallis, B.A., Clare; H. B. Wilson, B.A., Pembroke; P. F. Wilson, B.A., Calus; W. B. Wood, B.A., Jesus; S. Wood, B.A., Christ's; and C. S. E. Wright, B.A., Emmanuel.

THIRD EXAMINATION.

Part I., Pharmacology and General Pathology.—A. Abrahams, Emmanuel; R. R. Armstrong, Trinity; B. T. Ashby, B.A., Emmanuel; A. S. B. Bankart, B.A., Trinity; B. P. Campbell, B.A., Clare; J. R. O. Canney, B.A., Christ's; W. J. Carr, B.A., Trinity; A. E. A. Carver, B.A., and S. P. Chan, Calus; S. Churchill, B.A., and F. Clayton, B.A., Trinity; R. Cox, B.A., Calus; A. H. Crook, B.A., Christ's; R. Davies Colley, B.A., Emmanuel; H. E. T. Davies, B.A., St. John's; B. Day, B.A., Calus; A. T. Densham, B.A., St. John's; H. Dimock, B.A., Sidney Sussex; G. H. Dunn, B.A., Pembroke; H. B. Ellison, B.A., Calus; D. Emblesdon, B.A., Christ's; M. F. Emrys-Jones, B.A., Calus; N. M. Ferguson, B.A., Magdalen; G. W. Goodhart, B.A., Trinity; W. H. Grandage, B.A., Clare; F. W. Griffin, B.A., King's; R. E. V. Hale, B.A., Calus; A. Hamilton, B.A., Christ's; O. Heath, B.A., Trinity; G. Hoffmann, B.A., Calus; W. M. Jeffcoy, B.A., Trinity; N. W. J. Jenkin, B.A., Christ's; W. S. Leicester, B.A., Emmanuel; J. T. Macnab, B.A., Christ's; J. Mellanby, B.A., Calus; E. E. Paget-Orton, B.A., Trinity; H. B. Owen, B.A., Calus; E. F. Priestley, B.A., Trinity; W. C. Parkin, B.A., Emmanuel; H. Parsons, B.A., B. C. Priest, B.A., and R. F. Priestley, B.A., and Calus; C. L. Redman, B.A., Pembroke; L. W. Sharp, B.A., and O. R. Smale, B.A., Calus; E. R. Stone, B.A., Emmanuel; A. C. Sturdy, Pembroke; R. Swanson, B.A., Calus; H. H. Taylor, B.A., Pembroke; F. D. Treves, B.A., Calus; R. W. S. Waller, B.A., Trinity; and C. E. Whitehead, B.A., Calus.

Part II., Surgery, Midwifery, and Medicine.—The following have now sat the examination in all three sections: C. Akerman, B.A., Calus; E. D. Anderson, B.A., Pembroke; A. D. Brunt, B.A., Trinity; M. A. Cassidy, B.A., Clare; G. H. U. Corbett, B.A., King's; G. L. Cox, B.A., Christ's; F. D. Crew, B.A., Emmanuel; L. G. Davies, B.A., Trinity; A. H. Falkner, B.A., Peterhouse; J. N. F. Ferguson, B.A., and S. Gooding, M.A., St. John's.

H. T. Gray, B.A., Trinity; S. L. Harke, B.A., Pembroke; W. H. Hastings, B.A., and S. A. Henry, B.A., Trinity; F. S. Hewitt, B.A., Calus; H. F. V. Hodge, B.A., Emmanuel; A. B. Howitt, B.A., Clare; C. L. Isaac, B.A., and F. A. G. Jeans, M.A., St. John's; W. D. Keyworth, B.A., H. Selwyn; J. O. Leaton-Roberts, B.A., Clare; C. M. Le Brocq, B.A., Pembroke; W. B. Lee, B.A., Trinity; F. F. Leighton, B.A., St. John's; C. Lillingston, B.A., Pembroke; G. H. K. Macalister, B.A., St. John's; A. D. Miller, B.A., Trinity; W. P. Morgan, M.A., Clare; T. M. A. Nasty, M.A., and W. H. Newton, B.A., Emmanuel; G. W. de P. Nicholson, M.A., Jesus; W. H. Orton, B.A., Trinity; H. B. Owen, B.A., Calus; O. H. W. Page, M.A., Corpus Christi; C. T. Scott, M.A., Sidney Sussex; F. Shingleton-Smith, B.A., King's; G. C. E. Simpson, B.A., St. John's; J. M. Smith, B.A., Christ's; and R. S. Taylor, B.A., and W. P. Williams, B.A., Downing.

UNIVERSITY OF OXFORD.—At the Preliminary Examinations in Science the following candidates satisfied the examiners:—

Mechanics and Physics.—A. Booth, G. O. Boyd, M. de G. Boyd, C. E. N. Bromhead, A. J. B. Carrington, G. C. Clarence, R. E. Oullis, R. R. Enfield, C. R. Featherstone, R. J. Fletcher, P. L. Gibson, N. F. Hallows, A. H. Harries, T. K. Heaton, J. K. Hepburn, G. R. Hookham, J. P. Hucklebridge, J. M. Mason, M. Odling, W. J. Pearson, J. B. Reynish, I. P. Venner, V. S. von Dembski, and D. F. Wütsch.

Physics.—C. W. Armstrong, A. D. S. Arundel, T. B. Batefelor, J. L. Birley, R. B. O. Briscoe, P. R. Fairclough, H. J. H. Foreshe, C. L. Garton, M. R. Lawrence, S. F. Moore, and H. G. Morris.

Chemistry.—H. M. Bond, L. C. Boyd, C. E. N. Bromhead, C. D. Budd, A. M. Carr-Saunders, C. F. Cranswick, H. E. Cullis, V. G. Dearden, G. O. Dixon, R. R. Enfield, C. R. Featherstone, H. J. L. Foreshe, A. D. Gardner, P. L. Gibson, H. A. Gilbert, N. F. Hallows, C. H. L. Harper, A. H. Harries, T. K. Heaton, S. Hibbert, J. P. Hucklebridge, M. B. Lawrence, D. P. McDonald, L. K. Morrison, M. Odling, A. P. Orde-Ward, R. C. Oance, C. B. Pearson, J. P. Purnell-Edwards, J. B. Reynish, J. Russell, R. B. Simpson, E. A. Smythies, W. H. Thornton, I. P. Venner, V. S. von Dembski, J. T. Willis, C. O. Wilson, and D. F. Wütsch.

Botany.—T. B. Batefelor, A. R. Chavasse, A. W. Donaldson, H. G. Farmer, J. K. Hepburn, L. E. Meinertzhagen, P. le F. Norgis, H. M. Pope, E. A. Smythies, and A. Staeger.

FOREIGN UNIVERSITY INTELLIGENCE.

Algeria: Dr. Cange has been promoted to the chair of Clinical Ophthalmology. **Baltimore (Johns Hopkins University):** Dr. Charles H. Bunting has been appointed Assistant Professor of Pathological Anatomy; Dr. Thomas R. Boggs, Assistant Professor of Medicine; and Dr. Richard H. Folliis, Assistant Professor of Surgery. **Breslau:** Dr. Rudolf Stich has been recognised as *privat-docent* of Surgery. **Cincinnati (Miami Medical College):** Dr. O. P. Holt, Professor of Physiology, has been appointed to the chair of Pathological Anatomy. Dr. Robert Ingram has been appointed Assistant Professor of Materia Medica. **Copenhagen:** Dr. N. P. Schierbeck has been appointed *privat-docent* of Hygiene and Director of the Hygienic Laboratory. Dr. A. Heiblad has been recognised as *privat-docent* of Surgery. **Cracow:** Dr. Vincenz Lepkowski has been promoted to an Extraordinary Professorship of Odontology. **Innsbruck:** Dr. Paul Rasch has been recognised as *privat-docent* of Skin Diseases. **Lemberg:** Dr. Josef Markowski has been recognised as *privat-docent* of Anatomy. **Louisville:** Dr. John G. Cecil, Professor of Therapeutics, has been appointed Professor of Clinical Medicine in succession to the late Dr. J. A. Quackler. **Michigan (Ann Arbor University):** Dr. Albert M. Barrett has been appointed Assistant Professor of Neurology. **Philadelphia (University of Pennsylvania):** Dr. W. H. F. Addison of Toronto has been appointed Lecturer on Histology. **St. Petersburg (Female Medical Institute):** Dr. K. Susloff has been appointed Extraordinary Professor of Operative Medicine. **Vienna:** Dr. Arthur Schatzenfroh has been promoted to an Ordinary Professorship of Hygiene.

DEATH FROM ANTHRAX.—An inquest was held at Penryn, Cornwall, on Dec. 22nd, 1905, respecting the death of a labourer, aged 31 years. It was stated that the deceased received a scratch on the hand while unloading bones. Medical evidence showed that death was due to anthrax and the jury returned a verdict to that effect.

DONATIONS AND BEQUESTS.—At the opening of the Hampstead General Hospital recently the President, Sir H. Harben, announced that an anonymous donor had offered to give £20,000 on condition that £5000 were subscribed within a very short time. By the will of Miss Elizabeth Flint of Leek, Staffordshire, £1000 are bequeathed to the Leek Memorial Cottage Hospital, £400 to the Cruso Memorial Nursing Institution, £500 for the Royal Medical Benevolent College, £500 to the Devonshire Hospital and Bath Charity at Buxton, and £500 to the North Stafford Infirmary. Mrs. Umfreville Pickering has given £1050 to the West London Hospital, Hammersmith-road, W. The London Lock Hospital and Rescue Home has received the following donations: Goldsmiths' Company, £100; Mercers' Company,

£100; and Fishmongers' Company, 25 guineas.—Lord Ludlow, treasurer of St. Bartholomew's Hospital, has received £100 from "A Friend" for the general funds of the hospital.—By the will of Mr. Lewis James Sargeant of Tunbridge Wells £1000 are bequeathed to King Edward's Hospital Fund for London.

ACTION FOR THE RECOVERY OF MEDICAL FEES.—At the Bristol county court on Dec. 22nd, 1905, Mr. C. C. Pratt, surgeon, of Clifton, claimed £47 from a gentleman for medical attendance upon his mother-in-law. Evidence showed that the defendant and his wife placed the patient in charge of a lodging-house keeper in Clifton, with instructions to procure for the old lady all that was necessary, including medical attendance. The defendant had paid Mr. Pratt a previous account for his attendance upon the patient. Judgment was given for the plaintiff.

THE ROYAL WEST OF ENGLAND SANATORIUM, WESTON-SUPER-MARE.—The Royal West of England Sanatorium at Weston-super-Mare is much appreciated by convalescent patients, for during the past year 2470 cases have been admitted, the daily average number of patients being nearly 200. It has recently been decided to build an annex to the institution and this will be used by the nursing staff, and the wards which they at present occupy will give more accommodation to patients. It will also be utilised for any infectious case should an outbreak arise in the sanatorium. The committee has received £900 from a legacy which will be devoted towards the building and it is hoped that the additional sum required will be shortly forthcoming.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. E. von Kusy, director of the sanitary department of the Austrian Ministry of the Interior.—Dr. Carlo Rosanelli, formerly extraordinary professor of general pathology in the University of Padua.—Dr. De Villo W. Harrington, professor of urinary diseases in the University of Buffalo.—Dr. Domenico Chiara, formerly professor of midwifery and gynaecology in the Florence Medical School.—Dr. P. Abramichoff, *privat-docent* of dermatology and syphilography in the St. Petersburg Military Medical Academy.—Dr. Cornelis Laender van der Barg, a well-known authority on the medico-geographical pathology of the Dutch East Indies. He was 65 years of age.—Dr. Sousa Refoios, professor of medicine in the University of Coimbra.—Dr. Ambrose L. Ranney, professor of neurology and mental diseases in the University of Vermont, Burlington.—Dr. Hans Schmaus, extraordinary professor of pathological anatomy in the University of Munich, at the age of 43 years.—Dr. J. M. Holloway, formerly professor of clinical surgery in the Kentucky School of Medicine.—Dr. Hermann Rahl-Rückhard, *privat-docent* of anatomy in the University of Berlin. He received the Iron Cross for his services during the Franco-German war. He was granted the title of professor in 1884 and was for some years a member of the military examination commission. His published works deal with a variety of subjects, especially military hygiene and malingering.—Dr. André Thouvenet, formerly professor of physiology in the Limoges Medical School.—Dr. F. Hesch, extraordinary professor of ophthalmology in the University of Basle.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ANDERSON, R. W., M.B.O.S., L.R.C.P. Lond., has been appointed Medical Practitioner under the Workers' Compensation Act for Chatham, New Zealand.
ASGORE, W. T., M.B.O.S. Eng., has been appointed Medical Officer to attend to the Destitute Persons and Aborigines within the District of Talinga, South Australia.
BARNARD, CHARLES EDWARD, M.D., Ch.M. Edin., has been appointed Officer of Health for the Shire of Greendale, Victoria, Australia.
BIRD, ROBERT EDWINSON, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for Arapiles Shire, Victoria, Australia.
BOYLE, H. EDWARD G., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anaesthetist to the Paddington Green Children's Hospital.
CAMPBELL, DONALD ALBERT, M.B. Melb., has been appointed Senior Medical Officer to the Hospital for the Insane, Yarra Bend, Victoria, Australia.

DICKSON, FRANCIS HENRY, M.B., Ch.B. Edin., has been appointed Junior Assistant House Surgeon at the Stockport Infirmary.
GAUNT, J. P., L.R.C.P. Edin., M.R.C.S., has been appointed District Medical Officer of the King's Norton Union.
HILL, ARTHUR MACHEN, M.B., Ch.B. Melb., has been appointed Medical Officer for Newstead Shire, Victoria, Australia, temporarily.
HOLLON, JOSEPH THOMAS, M.B. Melb., has been appointed Medical Superintendent of the Ballarat Hospital for the Insane, Victoria, Australia, pro tem.
JAMES, WALTER TIMOTHY, M.B., Ch.B. Edin., has been appointed a District Medical Officer for the Aberystwyth (Cardiganshire) Union.
LIDDLE, PERCY HERBERT, M.B., Ch.B. Melb., has been appointed Medical Officer for the Borough of Daylesford, Victoria, Australia.
OLIVERSHAW, ROBERT, M.B., Ch.B. Vict., has been appointed Assistant House Surgeon to the Liverpool Infirmary for Children.
PHILIPOTT, ALBERT JOHN WILLIAM, M.B., Ch.B. Melb., has been appointed Medical Superintendent to the Hospital for the Insane, Beechworth, Victoria, Australia.
SMITH, H. WATSON, M.B., Ch.B. Aberd., has been appointed Second Assistant Medical Officer to the Durham County Asylum, Winterton, Ferryhill.
STEWART, J. M. T., M.B., Ch.M. Glasg., has been appointed Gynaecologist for Out-patients at the Perth Hospital, West Australia.
THOMPSON, GEORGE WILLIAM, M.B. Edin., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon in charge of Out-patients at the French Hospital, Shaftesbury-avenue.
WALCH, GEORGE ERNEST, B.A. Cantab., M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Sick Children, Great Ormond-street.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon. Salary at rate of £10 per annum.
BIRMINGHAM, UNIVERSITY OF.—Demonstratorship in Anatomy. Stipend £75 per annum.
BRISTOL ROYAL INFIRMARY.—Pathologist, Bacteriologist, and Director of Clinical Laboratories. Salary £250 per annum.
BURNLEY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £300 per annum.
CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.
DERBYSHIRE ROYAL INFIRMARY.—Two House Surgeons, one House Physician, and one Assistant House Surgeon. Salary of three former £100 per annum, with apartments, board, &c.; of latter at rate of £60 per annum, with apartments, board, &c.
GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board, lodging, and washing.
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physician.
MIDDLESEXBOURGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.
NAPSLEY, NEAR ST. ALBAN'S, HERTS, MIDDLESEX COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, washing, and attendance.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Resident Medical Officer. Salary £100 per annum, with board and residence.
NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, attendance, and washing.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Medical Registrar; also a Surgical Registrar (females).
SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.
UNIVERSITY OF LONDON.—Examiners. One each in Medicine, in Surgery, and in Pathology.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.
FORE DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BEATON.—At The Cliffe, Bradford, on the 2nd January, 1906, the wife of Dr. Gilbert T. Beaton, of a daughter.
FAIRFIELD.—On Dec. 25th, 1905, at Mere, Wilts, the wife of William Walter Fairfield, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.
FORBES.—On Dec. 27th, 1905, at Oakwood-court, Kensington, W., the wife of J. Graham Forbes, M.D., M.R.C.P., of a daughter.
SOPER.—On Dec. 25th, 1905, at Clapham road, S.W., the wife of Bertram Soper, L.R.C.P. (nee Frances Ash), of a son.

DEATHS.

DASTY.—On Dec. 30th, 1905, at the Silver Birches, Epsom, William Clement Dasty, M.D., M.R.C.S., L.S.A., aged 65 years.
GRAY.—On 25th December, at 22, Anerley Park, London S.E., Thomas Gray, M.R.C.S. Eng., and L.S.A. (formerly of 12, Montague-place, Poplar, E.), in his 94th year.
GREENER.—On Dec. 26th, 1905, at Fallowden, Cathedral road, Cardiff, Michael Hindmarsh Greener, M.B., C.M.

N.B.—A fee of 2s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

NELSON'S FATAL WOUND.

WE give below a copy of a statement, written and signed by Surgeon William Beatty, commissioned on board the Victory at the battle of Trafalgar, who attended Lord Nelson after the receipt of the mortal wound. Surgeon William Beatty's "Authentic Narrative of the Death of Lord Nelson, with the Circumstances preceding the Happening and Subsequent to that Event" were published with a "Provisionary Report of his Lordship's Wound," and certain anecdotes, immediately after the tragic occurrence and the note that we now publish was probably one that was penned for his own use as an immediate memorandum. It bears the shape of a letter but it is not addressed to anyone and the date of the year is not stated. Mr Dudley Brown of Woodside, Surrey, found the original document among some old papers and to his courtesy we are indebted for the copy.

[COPY]

H M Ship Victory, 15th December

About the middle of the Action with the Combined Fleets on the 21st October last, the late illustrious Commander in Chief Lord Nelson, was mortally wounded in the left breast by a Musquet ball, supposed to be fired from the Mizen top of *La Redoutable* French Ship of the line which the Victory fell on board of early in the battle, his Lordship was in the Act of turning on the Quarter Deck with his face towards the enemy, when he received his wound, he instantly fell, and was carried to the Cockpit where he lived about two Hours.

On his Lordship being brought below he complained of Acute pain in about the sixth or seventh Dorsal Vertebra, of privation of sense and motion of the body and inferior extremities, his Respiration was short and difficult, his pulse Weak small and irregular, he frequently declared his back was shot through, that he felt every instant a Gush of blood within his breast, and that he had sensations which indicated to him the approach of death: in the course of an hour his Pulse became indistinct and was gradually lost in the Arm, his extremities and forehead became soon afterwards cold he retained his wonted energy of mind, and exercise of his faculties, until the latest moment of his existence, and when Victory as signal as decisive was announced to him he expressed his pious acknowledgments thereof and heartfelt satisfaction at the Glorious event in the most emphatic language he then delivered his last order with his usual precision and in a few Minutes after expired without a struggle.

Course and Site of the Ball ascertained since Death—The Ball struck the forepart of his Lordship's Epaulette, and entered the left shoulder immediately before the Processus Acromion Scapulae which it slightly fractured, it then descended obliquely into the Thorax fracturing the 2nd and 3rd Ribs and after penetrating the left lobe of the Lungs and dividing in its passage a large branch of the Pulmonary Artery it entered the left side of the spine between the sixth and seventh Dorsal Vertebrae fractured the left transverse Process of the sixth Vertebra wounded the Medulla Spinalis and fracturing the right transverse Process of the seventh Vertebra, it made its way from the right side of the spine, directing its course through the Muscles of the back and lodged therein, about two inches below the inferior angle of the right scapula.

On removing the ball a portion of the Gold lace and Pad of the Epaulette together with a small piece of his Lordship's coat were found firmly attached to it. Signed W BEATTY, Surgeon

Surgeon Beatty, who was knighted many years later by King William IV, became a distinguished man in the medical profession, was physician to the Greenwich Hospital until his death in 1842 and a Fellow of the Royal Society. In Munk's "Roll of the Royal College of Physicians" it is stated that Sir William Beatty, who became a Licentiate of the Royal College of Physicians of London in 1817, kept the bullet which killed Nelson in a crystal case, mounted in gold. Sir William Beatty, who was a young man when serving on board the Victory, died in 1842.

SANDOW DEVELOPMENT TREATMENT A WARNING

To the Editors of THE LANCET

SIRS,—This experience may interest some of your readers. Some weeks since I advised a lady patient that some physical development would be likely to be good for her and after considering the method to be adopted decided, for certain reasons that she should write for particulars of the above. The prospectus promised a year's treatment for five guineas and pointed out especially that although the charge might appear to be high it included a series of instructions, forwarded from time to time as to progressive exercises for a whole year. It also offered to accept three guineas for the first part of the treatment. The necessary form was filled up and sent, with a cheque for three guineas. In return a letter was received giving some very general semi-medical advice such as the advisability of taking wine in moderation and omitting the bath during the periods and with it a small book containing printed directions for a series of exercises to be done so many times a day for two weeks. After this the remainder of the five guineas became due.

I must admit that no statement was made as to the length of time of the first part of the treatment, but by implication one might reasonably have expected a good deal longer period than two weeks. *Careful employer* certainly—but it may be advisable that your readers should be in a position to explain the terms to any patients who are thinking of going in for this treatment. I am, Sirs, yours faithfully,
Dec 31st, 1905 J G

A CORONER ON MEDICAL MISSIONS

A RECENT occurrence at Bethnal Green throws a little light on the working of medical missions. A woman took a child to the Home of Industry Medical Mission, where she found that one of the medical officers was ill, and after waiting an hour was told that the other medical officer had wired that he too was disabled by illness. The child died from bronchitis and, an inquest was subsequently held by the coroner for North-east London Dr W Wynne Westcott, who is reported to have said "These medical missions cause much trouble. They attend people for minor ailments, but if the patient is taken worse there is no one to attend him. Another doctor is called in when the patient is dying, and so an inquest is caused. Any medical charity which does not have a medical man on the premises is a nuisance." It is doubtful whether there is any need for many of these so-called "medical missions." In many cases they are formed not so much for the purpose of relieving the sick poor but as an advertisement for some enterprise or other. It may be a chapel or it may be an industrial society but the object is the same in either case—viz., to attract support by the offer of cheap or gratuitous medical attendance.

COMMUNICATIONS not noticed in our present issue will receive attention in our next

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN HOSPITALS

MONDAY (8th)—London (2 P.M.) St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.) St. George's (2 P.M.) St. Mary's (2.30 P.M.) Middlesex (1.30 P.M.) Westminster (2 P.M.) Chelsea (2 P.M.) Samaritan (Gynaecological) by Physicians (2 P.M.) Soho-square (2 P.M.) City Orthopaedic (4 P.M.) Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.) London Throat (3.30 A.M.) Royal Free (2 P.M.) Guy's (1.30 P.M.) Royal Ear (2 P.M.) Children, Gt. Ormond-street (3 P.M.)

TUESDAY (9th)—London (2 P.M.) St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.) Guy's (1.30 P.M.) Middlesex (1.30 P.M.) Westminster (2 P.M.) West London (2.30 P.M.) University College (2 P.M.) St. George's (1 P.M.) St. Mary's (1 P.M.) St. Marks (2.30 P.M.) Cancer (2 P.M.) Metropolitan (2.30 P.M.) London Throat (3.30 A.M.) Samaritan (9.30 A.M. and 2.30 P.M.) Throat, Golden-square (9.30 A.M.) Soho-square (2 P.M.) Chelsea (2 P.M.) Central London Throat and Ear (2 P.M.) Children, Gt. Ormond-street (2 P.M.) Ophthalmic, 2.15 P.M.

WEDNESDAY (10th)—St. Bartholomew's (1.30 P.M.) University College (2 P.M.) Royal Free (2 P.M.) Middlesex (1.30 P.M.) Charing Cross (3 P.M.) St. Thomas's (2 P.M.) London (2 P.M.) Kings College (2 P.M.) St. George's (Ophthalmic, 1 P.M.) St. Mary's (2 P.M.) National Orthopaedic (10 A.M.) St. Peter's (2 P.M.) Samaritan (9.30 A.M. and 2.30 P.M.) Gt. Northern Central (2.30 P.M.) Westminster (2 P.M.) Metropolitan (2.30 P.M.) London Throat (3.30 A.M.) Cancer (2 P.M.) Throat, Golden square (9.30 A.M.) Guy's (1.30 P.M.) Royal Ear (2 P.M.) Royal Orthopaedic (3 P.M.) Children, Gt. Ormond-street (9.30 A.M. Dental 2 P.M.)

THURSDAY (11th)—St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.) University College (2 P.M.) Charing Cross (3 P.M.) St. George's (1 P.M.) London (2 P.M.) King's College (2 P.M.) Middlesex (1.30 P.M.) St. Mary's (2.30 P.M.) Soho-square (2 P.M.) North West London (2 P.M.) Gt. Northern Central (Gynaecological 2.30 P.M.) Metropolitan (2.30 P.M.) London Throat (9.30 A.M.) St. Marks (2 P.M.) Samaritan (9.30 A.M. and 2.30 P.M.) Throat, Golden square (9.30 A.M.) Guy's (1.30 P.M.) Royal Orthopaedic (9 A.M.) Royal Ear (2 P.M.) Children Gt. Ormond-street (2.30 P.M.)

FRIDAY (12th)—London (2 P.M.) St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.) Guy's (1.30 P.M.) Middlesex (1.30 P.M.) Charing Cross (3 P.M.) St. George's (2 P.M.) St. Mary's (2 P.M.) St. Marks (2 P.M.) Ophthalmic (10 A.M.) St. Peter's (2 P.M.) Gt. Northern Central (2.30 P.M.) London Throat (9.30 A.M.) Samaritan (9.30 A.M. and 2.30 P.M.) Throat, Golden-square (9.30 A.M.) City Orthopaedic (2.30 P.M.) Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.) Children Gt. Ormond-street (9 A.M. Dental 2 P.M.)

SATURDAY (13th)—Royal Free (9 A.M.) London (2 P.M.) Middlesex (1.30 P.M.) St. Thomas's (2 P.M.) University College (9.15 A.M.) Charing Cross (2 P.M.) St. George's (1 P.M.) St. Mary's (10 P.M.) Throat, Golden square (9.30 A.M.) Guy's (1.30 P.M.) Children Gt. Ormond-street (9.30 A.M.)

At the Royal Eye Hospital (2 P.M.) the Royal London Ophthalmic (10 A.M.) the Royal Westminster Ophthalmic (1.30 P.M.) and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES

MONDAY (8th)—MEDICAL SOCIETY OF LONDON (11, Chandos-st. ch. Cavendish-square, W.)—8.30 P.M. Papers—Children's Diseases—(1) Dr E. Cantley. Chronic Membranous Colitis in Infancy. (2) Dr C. R. Fox. Bronchiectasis and Oesophageal Surgery. TUESDAY (9th)—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (23, Hanover-square, W.)—8.30 P.M. Papers—Dr A. Hall: Capillary Circulation and Blood Pressure and the Conditions that Control Them—Dr F. Taylor: Three Cases of Myoclonus.

WEDNESDAY (10th).—HUXTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.O.).—8.30 P.M. Pathological Meeting.
DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Meeting.
THURSDAY (11th).—BRITISH GYNECOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Annual General Meeting. The President (Dr. W. Alexander): Valedictory Address.
FRIDAY (12th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. L. McGavin: Transverse tears of Inguinal Colotomy. Mr. A. I. Pinches and Mr. E. M. Corner: Further Cases of Torsion of the Omentum.—Dr A. E. Garrod and Dr. Langmead: A Case of Associated Malformations including Transposition of Viscera.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—College opens.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Examination of Stomach and Gastric Contents.
TUESDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. H. Campbell: Clinique (Medical). 5.15 P.M. Opening Lecture:—Sir Felix Semon, E.C.V.O.: Some Unusual Manifestations of Syphilis in the Upper Air Passages.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Errors in Treatment.
WEDNESDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. J. Cantile: Clinique (Surgical). 5.15 P.M. Lecture: Dr. G. H. Savage: Climacteric Insanities.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Boddard: Practical Medicine. (Lecture I.)
THURSDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique (Surgical). 5.15 P.M. Lecture:—Mr. L. Mummery: Some Problems in Morbid Physiology.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Some Common Diseases of the Pharynx and Larynx. (Lecture I.)
FRIDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Clinique. (Eve.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Lloyd: Anaesthetics. (Lecture I.)
NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Opening Lecture:—Mr. J. Langton: Exploratory Laparotomy, its Objects and Limitations.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only. AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication. We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 will be ready shortly. Bound in cloth, gilt lettered, price 18s., carriage extra.

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To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 3rd, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuum.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 28	29.49	S.E.	0.09	45	45	37	41	42	Raining
" 29	29.24	N.E.	0.07	52	47	42	44	45	Raining
" 30	29.94	N.E.	0.67	51	42	40	39	41	Cloudy
" 31	30.29	N.E.	...	40	35	32	32	32	Cloudy
Jan. 1	29.89	S.E.	...	42	42	30	32	32	Cloudy
" 2	29.79	S.E.	...	45	44	32	41	42	Overcast
" 3	29.53	SSE	0.14	51	51	40	41	42	Cloudy

During the week marked copies of the following newspapers have been received:—*Sussex Daily News, Dispatch (Manchester), Liverpool Daily Post, Surrey Advertiser, Westminster Gazette, Yorkshire Post, North Guardian, Aberdeen Journal, Australasian Medical Gazette, American Journal of Surgery, Daily Express, Maryland Medical Journal (U.S.A.), Canadian Journal of Medicine and Surgery, Army and Navy Gazette, Birmingham Mail, Morning Post, Standard, Daily Chronicle, Express and Echo (Dorset), Globe, Belfast Whig, Birmingham Weekly Post, Sheffield Telegraph, Glasgow Citizen, Yorkshire Observer, Leicester Advertiser, Portsmouth Independent, Newcastle Chronicle, Manchester Guardian, South African Record, &c.*

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TO ADVERTISERS.

The Manager regrets that, in consequence of the great demand made on the advertising columns of THE LANCET this week, he has been compelled to omit a large number of announcements (other than those for which space had previously been booked) which reached the Office later than Tuesday.

Three Clinical Lectures

OR

THE "ACUTE ABDOMEN."

Delivered at St. Thomas's Hospital

By, WILLIAM HENRY BATTLE, F.R.C.S. ENG.,

SURGEON TO THE HOSPITAL.

LECTURE I.

Delivered on Nov. 2nd, 1905.

GENTLEMEN,—There is no branch of surgery which demands greater consideration from you than that to which I ask your attention, for it comprises a group of cases some of which will certainly cause you much trouble and anxiety in future life. It is of the greatest importance, therefore, that you should have a good working knowledge of this subject from the clinical standpoint. The only way to obtain this is by taking advantage of your opportunities now whilst you are at the hospital. Obtain permission to examine every abdominal case that comes under your observation, if it is possible to do so, without injury to the patient. Do not be satisfied with the statement of others that such and such a sign is present; examine for yourselves and endeavour to appreciate it on your own account. Having examined to the best of your ability, try to come to a decision as to the meaning of the signs before you and do not fail to be present at the operation, if any, so as to confirm or disprove the diagnosis. At one time all we could do was to follow these acute abdominal cases to the post-mortem room, for they almost invariably went there, but with increased knowledge of the various conditions on which the acute abdomen depends, a better estimation of the value of local signs and symptoms, and a satisfactory operative technique, we now save many who in comparatively recent years would have been condemned to death from the manifestation of the first symptom. Upon your early recognition of the importance of symptoms many a life may depend, for whilst our medical papers show wonderful instances of recovery from advanced and apparently hopeless states of disease, which give encouragement to us even in desperate cases, they do not show the numerous others which have not responded to treatment equally skilful.

On thinking over the question of the subject for a clinical lecture the other day it seemed to me that it would be an advantage to recall some of the more important cases of acute abdominal disease which have been in the hospital under my charge during the past few months, especially choosing those in which operation revealed a definite lesion which could be regarded as the cause of the condition, the treatment of which led to the saving of the life of the individual. In the early stage of acute invasion of the peritoneum, or a serious lesion of it, there will be the signs of "peritonism"—that is, the patient will suffer from shock, local pain, and vomiting; there is then an interval of varying duration when the powers of the individual are being fully employed in rallying from the shock, combating the invasion, and limiting its spread. Probably a peritonitis will immediately commence and other symptoms be superadded as the inflammation extends and the toxins produced by the invading hordes of bacteria become to a certain extent absorbed.

An abstract from "Diseases of the Vermiform Appendix and their Surgical Complications" may be made to give you an idea—a general idea—of what the "acute abdomen" is like when the earlier symptoms have been misunderstood: "The general symptoms are those of a person who is really ill, unless these are hidden by the injudicious administration of morphia. The face is almost always anxious-looking. The pulse is increased in rapidity, the respirations are slightly more frequent than normal, and shallower, the respiratory movements being chiefly costal. The abdomen, to which the attention is mainly called, is distended, more or less motionless, tender on palpation, sometimes also on

percussion, and often presents the signs of free fluid, such as dullness in the flanks, which shifts on movement. Vomiting is almost invariably present, and after that of the onset may pass off a little, only to become distressing later. The tongue is usually furred and the breath often foul. The bowels are almost invariably without action both to feces and flatus. In many cases the onset of the attack is accompanied by a diarrhoea, often offensive; or a looseness of the bowels may be a late symptom, and is then called 'septic diarrhoea.' But there is always some difficulty in the passage of the contents of the alimentary canal caused by a growth, volvulus, band, segment or segments of 'paralysed gut, &c. A rectal examination should always be made, although in the majority of cases it yields a negative result. The urine is usually scanty; at first normal, later it may contain albumin, but rarely blood." This description may appear inadequate and it is necessarily so; there are hardly any two cases that are alike in the cause of the sudden illness and in the resistance of the individual. So that in one patient the general symptoms are of the greatest importance and must be relied upon as an indication for treatment, whilst in another the local signs indicate the dangerous nature of the illness.

You will naturally ask what are the signs and symptoms to be specially noted in any case coming under notice with this history of sudden abdominal pain, shock, and vomiting? I take it that what is really required is to give such indications as may be useful in showing you when the state of the patient is one which requires operation to point out the symptoms which cannot be neglected with any consideration for the patient's welfare. These I will give briefly.

In the first place, look with attention at the patient's face, for you will learn much from it. The colour in a case of acute abdominal disease will vary very much from that of a healthy person to the dusky flush of one whose respiration is embarrassed; the expression, from a placid indifference, to that of a man in mortal agony. Sunken eyes with dark circles round them, a pinched face, and an anxious expression are very ominous; if the nostrils are working rapidly you may be sure that the pulse is also going too fast and there is very serious disease present.

The pulse-rate is a very important indication as to whether the case may be safely left, it is advisable to operate, or the patient is too far gone for relief. If some hours have elapsed since the commencement of the attack and the pulse-rate is much too high there is nothing to be gained by postponing an operation; every hour lost renders a successful operation less probable. Any abdominal case with a pulse-rate of over 100 should be carefully watched; if it continues to rise beyond this the patient will probably require surgical aid, although other symptoms may be improving. The temperament must be considered in estimating the value of the pulse-rate, for occasionally a patient may be unduly excited by the medical man's visit or suffering from a neurosis.

The temperature is often misleading; there may be the most widely diffused septic suppuration with a normal or subnormal temperature. Usually there is a rise at first, but it should begin to fall on the second day. A low or sub-normal temperature and a rapid pulse is a very bad combination.

Vomiting should cease after the onset and its continuance is a bad sign. The effortless pumping up of large quantities of greenish fluid should cause much concern.

Restlessness is an unfavourable symptom; so, indeed, is a condition of manifest indifference and apathy. Usually you will find your patient lying on the back with the arms thrown above the head and the lower limbs flexed on the abdomen. This attitude is not, however, universal.

Look for the marks of recent applications for relief of pain; these will give you some idea of its severity. Examine the skin for signs of inflammation and oedema and when the abdomen is fully exposed note the amount of movement on respiration as naturally performed, and then ascertain how much the patient can voluntarily increase this. Find out the exact seat and character of the pain by asking the usual questions; also the history of previous attacks of a similar kind. Gently palpate so as to learn the condition of the muscles as regards rigidity, general or local, also the presence of any local tumour or undue resistance. Percuss the abdomen throughout, but with a light hand, paying great attention to the flanks and to the parts above the umbilicus. If there is any dull area try if it is affected by

moving the patient, as the presence of free fluid is a sign of importance. Define the liver dulness. Observe also the extent of distension of the intestines, the presence, or otherwise, of peristalsis, and whether this is local or general. If there appears to be some distension of the bowel find out if this is increasing in amount.

It is hardly necessary to remind you of the necessity of learning from the friends, the state of the bowels, if there is inaction or diarrhoea. But you should nearly in all cases make a rectal examination at once and in most this has to be repeated. You thus ascertain from the beginning if the contents of the pelvis are normal or not. In some instances you will find inflammatory swelling on the right side and in others an abnormal amount of tenderness. The extent of these will, of course, vary much with the nature of the case and the duration of the illness.

The number of cases of acute abdominal disease which are secondary to disease of the appendix naturally make us, in the first instance, consider the subject from the point of view of that part of the digestive tract. The relative proportions of the various factors in the causation of acute abdominal diseases are shown in the statistics of the cases under care in St. Thomas's Hospital during the three years 1900, 1901, and 1902.* In all there were 456 cases, of which 168, or 37 per cent., were from disease of the appendix, forming by far the largest class.

Acute Abdominal Cases.

Appendicitis and its complications	37 per cent.
Intestinal obstruction (other than intussusception)	24 "
Intussusceptions	16 "
Perforations of the alimentary tract	11 "
Pelvic or gynecological cases	6 "
Abdominal abscesses (other than appendicitis)	3 "
The remainder	3 "

The great importance of the rôle which the appendix plays is clearly shown by this table. The first four of the groups in the list are the most important and require special attention. They are worth consideration in the first place from the question of age, for given certain difficulties in diagnosis the probabilities will be in favour of intussusception during the first ten years of life, acute disease of the appendix between the ages of 15 and 30, perforations of the alimentary tract from 15 to 40, and intestinal obstruction from the age of 30 upwards, with increasing frequency to a maximum between 50 and 60.

The simple uncomplicated cases of inflammation of the appendix, and those which are ending in localised abscess, are far more common occurrences than is generally taught, are not under consideration to-day. My remarks are chiefly concerned with the cases in which the inflammation of the surrounding peritoneum is not only a septic one, but one which tends to diffusion, and ends fatally if unrecognised or wrongly treated. A discussion of all of the combinations of symptoms and signs which may be met with in cases where diffuse peritonitis is coming on is beyond the purpose of this occasion. I desire now to illustrate by the description of cases some of the more common. When the illness is ushered in with a rigor, severe vomiting, very acute pain, or other startling symptoms, the friends, as well as the medical attendant are alarmed and on the alert, but when the onset is rather indefinite and the patient does not appear very much worse from one hour to the other there is a danger that surgical assistance may be asked for when it is too late to do any good. I have seen this very often in cases of gangrene and perforation of the appendix when the extent and nature of the mischief were quite unsuspected.

The case of a boy, aged six and a half years, is a very good example of the type of which I am speaking. He was admitted to the Leopold Ward on March 30th, 1905, and left on May 20th. He first began to be unwell on March 27th, about midday, and was sick on the 28th and 29th. He had some abdominal pain and constipation but not very much pain. He was thought to have some stomach derangement and was given castor oil. Mr. E. T. Whitehead, who saw him on the morning of admission, thought seriously of his state and agreed with me when we saw the boy together about 12 o'clock that he had diffuse peritonitis secondary to disease of the appendix. The state of the boy at that time was as follows. He was a pale lad with light hair, lying in his bed partly turned to the right, and apparently quite comfortable. He did

not look very ill, smiled when spoken to, and answered questions about his name, age, &c., quite readily. He drew a deep breath when requested to do so and said that his chest did not hurt him; he admitted that he had had some pain in the stomach. When requested to turn in his bed fully he did so easily and with a smile. The abdomen was somewhat distended, not rigid, but with greater resistance in the right iliac fossa than in other parts. In the right flank running obliquely into the pelvis across the iliac fossa was a well-marked area of dullness, evidently, from its shifting character, due to fluid. His tongue was moist and clean; he had vomited the night before but not that morning. The bowels were confined. He had slept without morphine. The temperature was 99° F. but his pulse was 140. At the operation at 3 P.M. we found very offensive pus in the right flank and pelvis, quite unlimited by adhesions, and lymph on some of the coils of intestine in the iliac fossa and pelvis. The appendix was large, its walls were cedematous, there was a circular band of gangrene running round it about three quarters of an inch from its distal end, and in the mesenteric border of this part there was a perforation. On opening the appendix there was a concretion above and another below the gangrenous part. The subsequent history was briefly as follows. The bowels acted on the 31st after a turpentine enema and improvement followed in the condition of the abdomen, but he suffered from vomiting. Until April 2nd he was very ill, losing flesh and strength, with occasional vomiting of coffee-ground material. His pulse had come down to 100 and his temperature was 98°, but he seemed to have no "rally." On the 3rd this brown, offensive vomiting ceased at 3 A.M. Later in the day five grains of calomel were given with good result and he began to improve. Making steady progress from this time he was no longer a source of anxiety to us.

This case has been given because the symptoms were not those typical of the acute abdomen; the onset was insidious, but I think it is a very important and excessively dangerous type. Operation was only just in time, and I feel confident that if it had not been for the skill and devoted attention of the sister of the ward he would have slipped through our hands, for his state was very serious for some days afterwards. In these cases a slow absorption of toxin takes place by the lymphatics of the peritoneum, and it may be only when renewed vomiting is added to the rapid pulse that the gravity of the case is appreciated. How often do we hear it said, "but I never suspected it; he had so little pain and seemed so well."

A more typical example of acute abdominal disease secondary to appendix mischief is the following. A school-boy, aged 11 years, was admitted to St. Thomas's Hospital, under the care of Dr. Hector Mackenzie, on Jan. 25th, 1905. His illness began four days before (on the 21st) during the night with acute pain in the right side of the abdomen; on the following day he was much worse. He also felt sick and vomited everything he took. His bowels were constipated and remained so until admission. The vomiting and pain in the abdomen continued. On admission he had a pinched, anxious-looking face and complained of pain in the abdomen, chiefly in the lower part on the right side. He was lying on his back with his legs drawn up. The abdomen did not move at all in the lower part and there was only a slight movement in the epigastrium and upper part. On palpation great tenderness was found all over the lower part, especially in the right iliac fossa. The abdominal muscles were rigid and a swelling was detected in the right iliac fossa, extending upwards from Poupart's ligament. This swelling could not be defined accurately owing to the muscular rigidity. On percussion dullness was present over this swelling and also in the left flank. The rest of the abdomen was resonant. The pulse was 100, the respirations were 20, and the temperature was 100.6° F. In contrast with the case of the other boy, who was quite non-resistant to his disease and indifferent to his surroundings, this patient was restless and protested vigorously against operation. At the operation free pus in considerable quantity was found in the peritoneum. There was much deposit of lymph on the peritoneum covering the small gut, which was generally reddened; in some places hæmorrhagic patches could be seen under this lymph. The purulent fluid filled the pelvis and extended into the right flank. The appendix was three inches long, thick, and fleshy, with gangrenous mucosa. There was a concretion in the central part and just below it a minute perforation externally plastered with fibrinous lymph. The peritoneal cavity was

* Loc. cit., p. 135.

washed out with warm saline solution; some of the lymph was gently removed with gauze sponges; a drainage-tube was inserted and also a gauze plug. After the operation the patient's sickness ceased; his pulse gradually fell to normal but was still 103 on Feb. 8th, 14 days after operation. At first he was peevish and difficult to please but left the hospital quite well on March 17th.

You will perhaps be called upon to give your opinion in a case in which, for a time, there has been a very evident improvement and the friends of the patient naturally want to know if the dangerous stage is not passed and safe convalescence assured. "He is so much better!" Here you must be guided by various considerations. At the hour when I should have been addressing you on this subject a month ago I was engaged in operating on a most instructive case, a brief note of which is here given.

On Oct. 2nd the patient, a previously healthy girl, aged 19 years, was slightly troubled with diarrhoea, the cause of which was not known. On the morning of the 3rd she was awakened the first thing by severe pain in the lower abdomen. She vomited throughout the day, being unable to retain any nourishment. The bowels did not act. She was kept in bed. On the 4th there was a severe attack of vomiting and diarrhoea at 3 A.M. and the pain persisted. When she was first seen the abdominal movements were very slight. There was general tenderness, especially in the epigastric and right iliac regions, but the abdomen was not very rigid. The tongue was coated and rather dry. The pulse was 136 and the temperature was 100° F. At 9 A.M. on the 5th the tenderness was rather more marked in the right iliac region than elsewhere. The abdomen was more distended and harder to the touch. Per rectum the chief tenderness was to the right; there was no tumour. Vomiting had ceased at 3 A.M. The pulse was 120 and the temperature was 99·6°. About 12.30 P.M. she was flushed and looked rather tired but was quite cheerful and clear headed. The tongue was furled; it had been dry. No morphine had been given. The abdomen was slightly distended, generally tender, not moving well, and the patient was unable to draw a deep breath. There was tenderness, especially in the right iliac fossa; the right rectus muscle in its lower part was somewhat fixed. On percussion there was dullness in the right flank and more resistance than elsewhere, but no definite swelling. Otherwise the abdomen was normal. The pulse was 140.

An operation was performed as soon as possible. Free purulent fluid was found on opening the peritoneal cavity and thick pus filled the pelvis; this was very offensive. The appendix was turned upwards and to the left and was adherent to the under aspect of the umbilical region. It measured about three and a half inches in length, was fleshy and contained a large concretion; below this was a patch of gangrene and in the mesenteric border of this patch there was a perforation. The pelvis was carefully cleaned with dry aseptic gauze. Some pus was removed from both flanks. The coils of intestine in the pelvis were covered with thick lymph which adhered closely and it was only sponged away where it was lightly adherent. A gauze plug was inserted and the pelvis was drained. On the 8th the patient was doing extremely well. The pulse was 60. There was no pain. The temperature was normal. The bowels acted after calomel. The abdomen moved satisfactorily and was no longer tender. The plug was removed and the glass tube was replaced by a rubber one. She has made a good recovery.

The reason why no one was consulted at the commencement of the illness was that as the patient always suffered much at the commencement of the period, and this was due on Oct. 3rd, her pain was put down to that. The period came on at the proper time but without relief of the pain. It was then recognised that the period was not responsible and that the patient had some severe illness. Here it was the rising pulse on the fourth day of illness more than anything else that induced us to urge operation on the relatives, for beyond this there was no unfavourable sign. Had there been a definite swelling in the iliac fossa or pelvis perhaps one would have felt less certainly of the need for immediate operation, for it would have been probable that some attempt at localisation was taking place. All the other symptoms were quite satisfactory.

In yet another case, also seen in consultation away from the hospital, after a definite attack of severe pain, the patient was apparently quite recovered from the peritonitis and felt perfectly well. Here the verdict in favour of operation was given because of the excessive rigidity of the lower

part of the right rectus which a dose of morphine had not in any way diminished. The patient, a man, aged 32 years, was seen with Dr. G. G. Davidson about 10 o'clock in the morning of March 15th, 1905. He had complained of some stomach ache on the previous evening and vomited after a dose of castor oil. He then sent for Dr. Davidson who, knowing that he had had a mild attack of appendicitis two years previously, examined him very carefully. The man had a normal temperature and natural pulse-beat and the only thing unusual was tenderness above Poupart's ligament on the right side. The pain was not very severe, so no medicine was given to make him sleep, but he went to bed earlier than usual and slept until 4 A.M. on the 11th, when he was awakened by a severe pain in the abdomen. He again sent for Dr. Davidson who found him suffering severely and gave morphine to relieve the pain. The pulse was then 70 and the temperature was normal. At 10 o'clock, when we met, the patient had been sleeping and the pain was completely gone. His expression was good. The pulse was 60, the respirations were 20, and the temperature was 99·6° F. The tongue was thickly coated but moist; the bowels were confined. The abdomen was rather rigid generally but not distended. Tenderness was complained of on pressure in the right iliac region but the lower part of the right rectus was so very hard and rigid that nothing could be felt in the iliac fossa. The percussion note in this region was impaired but it was difficult to define any dull area.

Immediate operation was advised and performed. There were some ounces of pus diffused in the iliac fossa and pelvis, with peritonitis affecting the coils of small intestine in the area exposed, some of which were covered with lymph. The appendix was large, measuring five and a half inches in length and about one and a half inches in its greatest transverse diameter. It was much distended and discoloured, being gangrenous in places. There was a stricture of the proximal end and beyond that was the distended portion; the gangrenous wall had given way in two places—one of these openings was partially blocked by a stercolith. Three other stercoliths were present and the whole of the mucous lining was gangrenous. The appendix was difficult to bring to the surface and could not be lifted until its attachments had been divided. The peritoneum was very sensitive; during the operation pulling on a coil of small intestine or sponging the peritoneum caused at once a change in respiration, and it may be that this unusual degree of sensitiveness was accountable for the paralysis of a part of the small intestine near, which subsequently developed, causing subacute obstruction. All inflammatory symptoms ceased after the operation; the temperature remained normal, whilst the abdomen remained without distension or pain, and the bowels acted, but nothing appeared to relieve the patient of his sickness.

A second abdominal incision a week later showed the complete absence of peritonitis and disclosed a portion of small intestine about 12 inches in length near the right iliac fossa, which was flaccid, and above which the gut was distended. This was emptied through a puncture which was then closed, but the patient did not survive many hours.

In this instance, then, the patient suffered from the local effects of the acute mischief and not from the general result of the absorption of toxins. Dr. Davidson deserved success, for no one could have been more prompt in the recognition of the severity of the case or have treated it with more skill than he showed.

We are told by some surgeons that the removal of the appendix should be carried out immediately in all cases when signs of an attack of appendicitis are recognised. This may be called the counsel of perfection. The public, which has become somewhat familiar with the disease in its milder attacks during the past few years, can tell you of so many friends who have recovered without operation that the suggestion is scouted as soon as made. You cannot with a good conscience say that the attack will not in all probability pass over without risk of life in the majority of those treated by you. What I do think is that your duty as a medical adviser renders it imperative that you should be so skilled in the recognition of the various aspects of the disease that you should be able to say without doubt when immediate operation is imperative, not only when it is advisable. There are quite sufficient proofs in the hands of the profession that such excellence can be attained. My advice to you is to endeavour to reach it. So many of these acute cases come into hospital at night that you must be prepared for some

self-sacrifice if you wish to gain all the good you can from your hospital opportunities.

There is another thing that should be remembered and it is not only the need for operation in these serious cases but for early operation. A few hours may make all the difference between a life saved and a life lost. Do not behave with over-anxious fussiness that shows your alarm to the friends, if you conceal it from the patient himself, but see that sufficiently frequent visits enable you to observe the earliest signs of any unfavourable change. There are undoubted recoveries on record from an acute septic general peritonitis, but they are not so numerous as published cases would have us believe. There is a difference between "diffused" and "general" which is, I am afraid, not always appreciated by those who write and talk of their own cases.

In the remarks that I have made to-day I have only mentioned a few cases which have been under my personal observation; as you know, there have been some which have been treated by other surgeons in the same wards with equal success. They may have been as instructive as their treatment was successful but they cannot be quoted here as I did not see them. I have not mentioned cases of peritonitis which presented no prospect of recovery from the time of admission (the too late type); they would not do more than emphasise what I have endeavoured to impress upon you—the importance of the early recognition of symptoms, and promptitude in acting upon them in the conditions on which the "acute abdomen" when due to a diseased appendix depends.

In the consideration of the acute abdomen and its relationship to disease of the appendix there is another way in which a most serious condition may arise and that is through the bursting of an appendix abscess into the peritoneal cavity. This is a most formidable complication to control and until a few months ago it was in my experience invariably a fatal one. As you are aware, in cases of appendix suppuration there is an attempt made by nature to localise the pus; occasionally for some reason this is only successful for a time and there is a further spread of the pus and involvement of more of the peritoneum. This appears to take place slowly and is not accompanied by the definite signs which we have spoken of as peritonism. A very different clinical picture is presented by the patient in whom an abscess containing a large amount of pus has suddenly burst, distributing its septic contents throughout the abdomen.

Examples of this complication of appendix abscess have been under treatment during the past few months; they are very instructive and give hope for the future. Altogether four such cases have been under care since July, 1904. They are as follows:—

CASE 1.—In this case, that of a boy, aged 16 years, the abscess ruptured whilst he was lying, preparatory to operation, in the male medical ward. There was great shock and at the operation there was a quantity of purulent fluid generally diffused. The operation was not successful in saving life and the patient died in a few hours from general peritonitis.

CASE 2.—The patient, aged 19 years, a ward maid at a fever hospital, was admitted under the care of Dr. Mackenzie on Nov. 3rd, 1904. Her illness commenced with pain in the right iliac region seven days before admission; she was obliged to go to bed, but resumed work on the following day, and did her usual duty as well as she could until 16 hours before she came in, when a sudden acute pain attacked her and she was again obliged to go to bed. There had been diarrhoea for two or three days. When seen with Dr. Mackenzie she was propped up in bed; her nostrils were working rapidly and she was breathing with some difficulty; her face was dusky and anxious-looking. She was somewhat restless but quite clear in her mind and able to answer questions. Her respirations were 32, her pulse was 100, and her temperature was 100.6° F. The lower abdomen was distended and did not move at all on respiration; the upper half moved moderately. On palpation there was a marked resistance in the lower half of the abdomen, especially over the right iliac fossa, where there was a definite swelling. There was great tenderness here but the abdomen was generally tender. On percussion dullness was found in both flanks but not above the pubes. The liver dullness was obliterated. The respiration was thoracic and shallow; the tongue was furred and dirty.

Two incisions were made, one through the right rectus and the other in the left linea semilunaris. The abscess was

found to have given way on the pelvic aspect and the pelvis was filled with offensive semi-purulent fluid which was generally diffused throughout the lower part of the abdominal cavity. Lavage with warm saline solution was carried out and drainage through both openings. The patient made a good recovery and left hospital on Dec. 15th. The appendix was excised on Jan. 18th, 1905. It was two inches long. A stricture was situated half an inch from the tip, below which had been a small perforation; it was adherent to the caecum. The omentum was adherent to the old cicatrix, otherwise there was nothing unusual.

CASE 3.—The patient, a man, aged 33 years, was sent to the hospital by Mr. S. R. Hallam and was admitted under the care of Dr. Mackenzie on Nov. 4th, 1904. He had had an attack of pain in the abdomen on Oct. 31st, chiefly on the right side, but did not give up his work. During the night of Nov. 3rd an attack of intense pain was experienced and he came to the hospital in the morning 16 hours later. When examined he was found to be perspiring freely; his face was pale and anxious looking and his respirations were shallow and diaphragmatic. An attempt to breathe deeply caused him much pain in the abdomen. His pulse was 104 and his temperature was 101.2° F. There was no vomiting. The bowels were confined. The abdomen did not move on respiration and was very tender on examination, especially in the right iliac region and in the loins. There was dullness in the flanks and the liver dullness was obscured. The abdominal muscles were rigid, this rigidity being most marked on the right side. In the right iliac fossa there was an ill-defined swelling. At the operation two incisions were made, one through the right rectus muscle and the other through the middle line below the umbilicus. Offensive, semi-purulent fluid was generally diffused throughout the peritoneum. The intestines looked very congested and cedematous. The abscess had ruptured to the outer side. Lavage with saline fluid of a temperature of 110° was thoroughly performed, the hepatic and splenic regions being carefully irrigated. Drainage was employed from both wounds. These were closed by Dec. 17th. On Jan. 4th, 1905, the appendix was removed. It was one and a half inches long and contained two strictures, proximal and distal; the lumen at the extremity was obliterated. There were evidences of a former perforation below the distal stricture. The appendix was coiled up beneath the caecum in a mass of adhesions.

CASE 4.—The patient, a married woman, aged 34 years, was sent to the hospital by Mr. C. Dwight Morris of Feltham on March 22nd, 1905. On March 15th she began to feel ill with pain all over the abdomen. The day before admission the pain became suddenly much worse and she vomited a good deal, but it was not until the day of admission that it became localised to the right iliac fossa. The vomiting continued. There had been no previous attack of severe pain in the abdomen but she had suffered at times from indigestion and wind. The face was flushed and appeared somewhat anxious and drawn. The abdomen was distended in the lower part, especially in the right lower quarter. The distension was not great, but movement on respiration was very poor in the lower half. The abdominal wall was unusually flaccid and a swelling was detected in the right iliac fossa extending upwards from the outer half of Poupart's ligament. There was a good deal of tenderness on pressure over this swelling; the rest of the abdomen was also tender but only to deep pressure. Around and below the umbilicus coils of intestine were seen with occasional peristalsis. On percussion dullness was detected in both flanks and in the iliac fossa. The liver dullness was normal, the temperature was 101.6° F., and the pulse was 124. At 8 P.M. the abdomen was opened through the right rectus muscle. A small quantity of purulent fluid welled out and a large collection was found in the pelvis; flakes of lymph were found in various places adherent to the intestines which were red and inflamed. The thickening in the iliac fossa was composed of coils of small intestine which had limited an abscess cavity, the pus from which had mostly escaped through an irregular opening to the outer side. Below this opening, extending outwards and upwards, was the appendix, the separation and removal of which were readily effected. It was much swollen and presented a perforation about the middle of its length, the result of gangrenous ulceration. Two small concretions were found free outside the appendix, which was not strictured. The peritoneal cavity was thoroughly washed out with sterilised saline solution (110°). A glass tube was passed into the

pelvis and a gauze drain was placed above the opening into the iliac abscess cavity. A few fish-gut sutures were then employed to bring the edges of the wound together. In the evening the pulse was 100, the temperature was 99.2° , and the respirations were 24. The gauze drain was removed on the fourth day, the glass tube was replaced by a rubber one on the seventh, and this was replaced by a gauze strip on the fourteenth. The wound slowly closed and the patient was able to get up on May 9th, leaving hospital on the 15th. She had no pain after the operation but her temperature, although never high, did not become normal for the whole 24 hours until April 2nd.

A Lecture

ON

THE INSTITUTION AND SANATORIUM TREATMENT OF PULMONARY TUBER- CULOSIS IN RELATION TO LARGE CENTRES OF POPULATION.

Delivered at the Mount Vernon Hospital Post-Graduate
Course on Jan. 18th, 1906.

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GENTLEMEN,—The death-rate in the city of Leeds, which has a population of over 450,000, was 15.3 per 1000 during 1905. Of these deaths no fewer than 1.23 per 1000 were due to pulmonary tuberculosis, for 558 individuals succumbed to this disease. During this time there must have been at least three or four times that number—viz., from 1660 to 2200—of individuals actually suffering from pulmonary tuberculosis in Leeds. Dr. J. Spottiswoode Cameron who has kindly furnished the above figures also tells me that the death-rate from this disease has diminished during the past three quinquennial periods—from 1.50 in 1891-95, 1.45 in 1896-1900, to 1.32 in 1901-95. This number of consumptives is undoubtedly largely recruited from the poorer classes in the community. It is this class of phthisical patient about which I propose to speak to-day, and what I shall have to say will be largely based upon an experience obtained by an intimate connexion with the Leeds Tuberculosis Association since the time of its foundation in 1899. This association has now 70 beds at its disposal, 34 of which are used for early cases at the Gateforth Sanatorium and 36 for advanced cases at Armley Hospital. It is only too obvious that these small numbers are totally inadequate for the purpose and we look forward to further extensions. The scheme has, however, furnished us with some useful experience and it enables one to get an idea of what is really required if we are to grapple effectively with the morbidity and mortality caused amongst us by pulmonary tuberculosis.

By institution treatment I understand the treatment of this disease in institutions specially set aside for the purpose. We all know how unsatisfactory is the out-patient treatment of the disease in large general hospitals; at any rate, an 11 years' experience of it has brought this fact sufficiently home to me. It consists of the routine treatment of the appetite and of digestive disturbances, the provision of substitutes for food which many are unable to obtain at their own homes, the sedative treatment of cough, &c. The course of the cases is a chequered one but the tendency is nearly always in a downward direction and eventually they drop out. If one is able to follow them up, as in a public dispensary practice, one generally finds that they have died and not a few unexpectedly—that is, somewhat early in the disease.

Any scheme which adequately deals with the prevention and treatment of pulmonary tuberculosis in our large centres of population should include (1) an institution or sanatorium

for the earliest cases; (2) an institution or home of rest for advanced cases; (3) a hospital for cases intermediate between these two classes; and (4) a city office, including an out-patient department. In the Leeds scheme we have three out of these four essentials, but our out-patient department does not yet include the treatment of our patients but only the examination and observation of them. We have no hospital in the sense which I shall explain later and everything we have is much too small for its purpose.

1. *The sanatorium for the earliest cases.*—This brings me at once to the question of the value of sanatorium treatment for the poorer members of the community. At the present time no one would, I take it, contend that the sanatorium treatment of pulmonary tuberculosis is an ideal one. Among its disadvantages may be mentioned that the treatment must be prolonged, that it is expensive, and that it almost necessitates an enforced idleness which may be, and often is, demoralising. Permanent recovery can only be expected in the earliest cases taken from the phthisical poor of our large communities. This does not mean that nearly all cases, early or otherwise, will not receive obvious and great benefit from the open-air treatment—quite as great benefit as is derived from the hospital treatment of many chronic diseases, but they are not, and cannot be, looked upon as cured or, to speak more euphemistically, they will relapse when they return to insanitary homes where the necessities of life are far from plentiful. The discharged patient may be fit for work, but the competition in the labour market is keen and the delicate (including the phthisical) cannot compete with the sound. This we have seen over and over again even in cases where the prolonged idleness has not had the effect of making an individual disinclined to work. These facts make it all the more necessary to select the *earliest* cases from among those who apply to us for sanatorium treatment if we are to make the best use of our small sanatorium.

Selection of patients for sanatorium treatment.—My practice is to divide these patients into the febrile and non-febrile and the latter into four groups, according to the extent of the disease. Thus a patient who has a temperature verging on or above 101° F. would not be admitted even though the physical signs were slight. We make some provision, as will be mentioned later, for a few febrile cases in our other institution and if the temperature subsides they may be transferred to the sanatorium later. The non-febrile cases are further divided into bilateral and unilateral. This division is based on physical signs and obviously may not be really correct, as the existence of a lesion no doubt precedes the physical signs, but it forms a useful basis of classification. The non-febrile and unilateral cases are further subdivided into three groups.

Group I.—Cases in which the physical signs are slight and limited to the extreme apex. A thorough examination of all parts of the chest is made as not only the presence of the disease must be ascertained but also its extent. Diminished and delayed movement, an impaired percussion note (especially over the clavicle and inner part of the first interspace), an alteration of the breath sounds in the direction of bronchial breathing (broncho vesicular and vesiculo-bronchial breathing), and weakening of the breath sounds are carefully looked for. I am led to attach much importance to this weakening of the breath sounds. It is often very well marked in the downward extension of the disease towards the base of the lung, and frequently with increased vocal vibrations. I have very clear recollection of a boy repeatedly examined who had this weak breathing at the left base and no other physical signs. I thought that there might be something pressing on the left bronchus—possibly tuberculous glands—as there were enlarged glands in the neck. In a few months' time the whole broke down into riles and the case was clearly one of basic phthisis. The inspiration may be roughened, suggesting its early breaking down into riles. We need to diagnose the disease early, even if possible in a pre-rile stage. As regards stethoscopes my own preference is for the phonendoscope. Sometimes I make use of two instruments, each one specially connected up with a rubber tube and ear-piece. This is a cumbersome arrangement, but it appears at times to furnish additional information in comparing the physical signs on the two sides or in examining an apex simultaneously from the front and the back. In Group I. I also include cases where there are no definite signs but where there is other evidence making the presence of pulmonary tuberculosis certain, or almost

be kept practically empty of patients during the day. In this way the risks of infection, reinfection, and secondary infection are reduced to a minimum. The patients, with some exceptions to be mentioned later, are in the advanced stage of the disease or the subject of some serious complication such as laryngeal tuberculosis. Indeed, the advanced stage of the disease and poverty should together be the chief claims of the patient for admission into the home.

The improvement which even the advanced case will often undergo is quite remarkable; I have seen patients with physical signs of disease over the whole of one side and a considerable part of the other put on nearly two stones in weight. The diet is a generous one, better than that of a general hospital, but not quite so good as that of a sanatorium. Last year the average cost of the patients per head per day was 3s. 4d., as against 3s. 7½d. at Gateforth, the office expenses being 3½d. The relief of symptoms which these patients (accommodated as they often are on verandahs) experience even towards the end of life, is striking. The occurrence of night sweats is quite exceptional with us and then they only occur on isolated occasions. I never need to use drugs for them. The dyspeptic symptoms are often relieved. Diarrhoea is not common with us. It is treated in the usual way and particularly with copper sulphate and opium. The cough may abate but it mostly requires treatment at night. When morphine does not satisfactorily control it, syrup of codeine or a linctus containing heroin is used. Severe hæmoptysis has not been as common as one might have expected, considering the class of case admitted. I have thought that nitrite of amyl has been of service in its treatment. I have used chloride of calcium in some cases of recurrent and persistent hæmoptysis but its usefulness was open to doubt. Not a few of these advanced cases have very little pyrexia. When this exists rest in bed undoubtedly moderates it but in some cases rest in bed, sponging, phenacetin, &c., have little effect upon it. I have only seen in one or two isolated cases any real improvement in the physical signs. In the treatment of tuberculous disease of the epiglottis giving rise to much difficulty of swallowing I believe that amputation of the epiglottis is a proper method of treatment and I intend to try it. Mr. H. S. Barwell kindly allowed me to see some of his cases in the Mount Vernon Hospital at Hampstead in which much relief had resulted from this treatment.

I have tried intravenous injections of iodoform in one case only but the disease steadily went on extending so that I was not encouraged to try this method again. I may say here that I have no experience of the tuberculin treatment of pulmonary tuberculosis and up to quite recently I have been quite disinclined to try it in any stage of the disease, but Professor A. E. Wright's valuable researches into the subject of the opsonins have shed a new light upon it. It is a matter which must engage the attention of all those who have to treat phthisis.

Death has nearly always been preceded by attacks of difficulty of breathing. These attacks become more severe, the patient ultimately dying in one. Our Armley institution is, as I have said, intended for advanced cases but the rules allow the admission of a few acute early febrile cases. These cases are treated in shelters and on verandahs even for long periods of time if there is any chance of permanent good resulting. If the fever subsides and the patient's condition warrants it he would be transferred to Gateforth. The home of rest must necessarily be much more accessible than the sanatorium need be. In Leeds it is accommodated in a large adapted mansion and grounds in the higher parts and near the confines of the town.

3. In the selection of cases for Gateforth Sanatorium on the one hand and for the Armley Home of Rest on the other it only too often happens that many have to be rejected for the sanatorium whose disease is not sufficiently advanced to make them eligible for a home of rest. This intermediate class of case may diminish as cases are recommended or apply to us earlier in the disease, but still it cannot disappear. For these intermediate cases it seems to me that another institution is required. It should not, in my view, be a part of the home of rest nor yet of the sanatorium, or at any rate these cases should not be housed under the same roof as the advanced or the early cases. This third institution would be a hospital for consumptives. The stay in it would be comparatively short—say, from six to eight weeks. The patient would be carefully instructed in what he has to do to avoid spreading the disease to others. He would no

doubt improve during his stay in the hospital; it would give a short breathing time to those who are keeping the home together and it would permit of the house being thoroughly disinfected. The object of this hospital would be largely, but not wholly, preventive in character and educational. Febrile cases would be treated here and their subsequent course would determine what should eventually be done with them. Suitable provision could also be made here for the observation of suspected cases of pulmonary tuberculosis for the purposes of diagnosis. Only a short stay would satisfy this requirement in the majority of doubtful cases. The hospital would need to be accessible and situated in as healthy a part of the town as possible, preferably near its boundary.

4. A city office, including a board-room and an out-patient department, would complete the scheme. This must be situated in the centre of the town.

As an integral part of any scheme for dealing with pulmonary tuberculosis in our large centres of population the prevention of the disease must receive close attention. It is most important that the medical officer of health should be in close contact with the scheme. Fortunately our medical officer of health (Dr. J. S. Cameron) is on our committee and gives us valuable help. We supply the sanitary office with the names and addresses of all patients who apply to us for relief. Thus, when a patient is removed to one or other of our institutions his house can be disinfected. The list of discharged patients is also furnished to the sanitary office, so that they can be kept under observation. Cards with printed instructions on them are given to every applicant at the office and he is invited to buy at cost price spit-bottles and paper handkerchiefs. These articles are presented to those who cannot afford to buy them. Rules as to how the patient is to deal with his sputum are posted up in the wards of our institutions. A clear violation of these rules after a warning leads to the discharge of the offender.

The above scheme may seem to be a somewhat elaborate one. The prevention and treatment of pulmonary tuberculosis is, however, a complex and at the same time a costly undertaking, but with the present mortality from this disease, surely it is worth the labour and the money spent upon it if only we succeed in reducing the heavy death-rate from a disease which should, at least from the theoretical aspect, be completely preventable.

Remarks

THE EVOLUTION OF OPERATIVE GYNÆCOLOGY,

Being a Valedictory Address Delivered at the Annual Meeting of the North of England Obstetrical and Gynaecological Society at Manchester on Jan. 19th, 1906.

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GENTLEMEN,—In the early days of an operation which is intended to remove some defect the operator aims directly at the object to be fulfilled. He roughly estimates the difficulties and dangers, many of which he cannot foresee, as the route he is taking has never been traversed before. His is not the lot to elaborate and to devise improvements the necessity for which is as yet unknown. Hence, early methods are crude and devoid of niceties of execution. Then improvements are added and improvements on improvements, until simplicity is overlaid with complexity. For a time the attention of operators is directed towards combating one or other of the many difficulties they or their predecessors have encountered. Their efforts are solely expended on details, to the surmounting of isolated obstacles, frequently to the neglect of the "unities" of

the operation. When this has gone on for a time a reaction sets in. Complicated methods are abandoned and a return is made in the direction of the primitive simplicity shorn of its crudities. It is interesting to note how this striving after perfection in operative procedure is cyclical in its course; it forsakes the primitive simplicity and makes for complexity, and when furthest from its starting point it tends to return there. Crude directness of purpose gives place to elaboration of method which, in its turn, yields to that effective simplicity which represents the high water mark of applied knowledge.

In few matters is this more forcibly shown than in surgical operations on the abdomen which involve exceptional difficulties owing to the close contiguity of many important organs and to the fact that the whole procedure takes place in a cavity into which only a limited access is obtainable. Beyond this there is the risk of hæmorrhage and of the possible escape into the abdominal cavity of exudative products from the tissues dealt with by the knife. Take, for example, Cæsarean section; suturing of the uterine wound was performed as far back as the beginning of the last century and even earlier, one or, in some instances, three sutures being used. Subsequently suturing fell into disuse. I can remember many years ago discussing with one of the greatest authorities of the day on Cæsarean section, my colleague, Thomas Radford, the question of suturing the uterine wound, when he spoke strongly against suturing, stating that the unaided contraction of the uterus was sufficient to prevent leakage from its cavity. At the present time suturing the uterus is regarded as one of the chief means of securing success, but then the mode of applying the sutures has been vastly improved since the days when one or two were deemed sufficient. Whilst suturing the uterine wound was still a debateable point the enormous fatality of Cæsarean section induced Porro to put into practice an operation he devised for the total removal of the gravid uterus. The principles of this operation had long before been suggested but had never been tried in the human subject. This operation, as a premeditated operation, was first performed by Porro in 1876. Its success led to a material reduction in the mortality of the operation for the delivery of women with pelvic obstruction so extreme as to be incompatible with the passage of a child, but exception was taken to it as a mutilating operation which deprived the woman of her natural functions. A return was then made to the primitive mode of abdominal delivery. Improved methods were devised which greatly reduced the mortality of the operation and at the same time avoided removal of the uterus. It was at this period that attention was specially directed to the suturing of the uterine wound. Amongst the modifications in the mode of applying the sutures may be mentioned those of Frank, of Kehrer (in which the uterus was incised transversely about the position of the internal os), and of Sänger; in all of them the apposition of the edges of the uterine wound claimed the most attention. Kehrer advised double sutures; some deep seated for the union of the muscular wall; others superficial to bring the peritoneal aspect of the wound into apposition. Sänger went further; he separated the peritoneum round the wound from its muscular bed and then pared a wedge-shaped strip of tissue from the edges of the wound and inserted deep sutures in such a way as to include the muscular coats whilst avoiding the mucous membrane; the edges of the peritoneum were subsequently more accurately united by superficial sutures placed closely together. The object was to make a sound impermeable closure. Here we have a return to sutures after they had been entirely abandoned. These improved methods of performing Cæsarean section have inverted the previous rates of recovery and of mortality: formerly the mortality reached 70 to 80 per cent.; at the present time the recoveries number 80 per cent.

As another example of returning to previously relinquished methods in the course of operative evolution, take operations on the cancerous uterus which in the first instance were performed through the abdomen. In 1828 Blundell removed the entire uterus through the vagina for cancer but the results were bad and the operation was abandoned. After this the cervix only was attacked through the vagina. Then return was made to total removal with improved methods: ligatures were applied before the structures were divided and after removal of the uterus the vagina was packed with gauze which acted as a drain. The latest method of removing the cancerous uterus is that of Wertheim, through the abdomen, the primitive path for the removal of uterine tumours. Again, the cure of vesico-vaginal fistula was performed in the early part of the last

century by simply paring the edges of the opening and bringing them together with ordinary sutures. Then silver wire was substituted, then split leaden pellets placed over the sutures were squeezed together so as to grip the sutures in place of tying them. Bozeman introduced metal plates with a series of holes through which the sutures were passed and the pellets fastened on. This was done in order to prevent the pellets being buried in the tissues by inflammatory swelling. All these modifications were found to be needless and injurious. At the present time silkworm-gut or catgut sutures are used in the ordinary way, which is practically a return to the original method. The complicated modes of uniting the ruptured perineum with quilled sutures and other elaborate devices have in their turn given place to the original simple suture.

The mode of dealing with the stump of the pedicle in ovariectomy has passed through many varied phases. In 1842 Charles Clay ligatured the pedicle and brought the ligature through the lower end of the abdominal wound, partly to act as a drain, but more especially to provide for removal of the ligature when its separation from the pedicle had taken place. In 1861 Tyler Smith ligatured the pedicle and after cutting the ligature short dropped the stump into the abdomen. Next came the clamp in all its forms, then the stitching of the stump of the pedicle to the abdominal wound. After this was the reign of the drainage-tube. At the present time we have reverted to the plan of cutting short the ligature and dropping the stump into the abdomen, only using the drainage-tube in exceptional cases.

When we glance over the vista of operative evolution we encounter two prominent features—the absence of anything like finality and the dominant tendency to revert to the primitive conception. This being so in the past, it is obviously more than probable that change will still follow change; what is orthodoxy to-day is heresy to-morrow. With this thought in our minds let us critically examine side by side the two operations by the vaginal and by the abdominal routes—now resorted to for removal of the cancerous uterus—and endeavour to estimate their relative advantages as regards the difficulty of performance and the duration of the operation, the amount of skilled assistance that is required, the risk of injury to contiguous organs, and the danger of hæmorrhage and of shock.

The difficulty encountered in removing the uterus by the vaginal route is usually not great. In nulliparous or in old women, however, in whom the vagina is narrow, and especially if the vagina is infiltrated with the cancerous deposit, the difficulties are materially increased. The duration of the vaginal operation is much shorter than that by the abdominal route; and the necessity for a number of skilled assistants is less. Greater skill and judgment are required for the removal of the uterus through the abdominal wall; there is more risk of injury to the ureters, to the bladder and other pelvic viscera, and the minute dissection which is needed to separate the new growth from the healthy tissues, especially from the blood-vessels with corresponding risk of hæmorrhage, all contribute to render the abdominal operation a more formidable procedure than the vaginal operation. The frequently excessive duration of the abdominal operation and the depressing effects of the prolonged exposure of the open abdomen (however warm the atmosphere of the room may be) are each and every one adverse factors, to which may be added a greater risk of septic infection. However carefully the operation be performed there is no evidence as yet that the abdominal operation affords less risk of recurrence of the cancer than does the vaginal method. In addition to the ill-effects that are directly due to the prolonged manipulation of the abdominal contents the protracted administration of the anæsthetic is of serious import. It has been found after lengthy periods of chloroform inhalation that death has occurred many hours, and even days, after an operation and that it was difficult to assign a cause for it. In some of these cases post-mortem investigation has revealed extensive fatty changes in the tissues, especially in the heart, due to the prolonged action of the anæsthetic. The inference to be drawn from all this is that when practicable the vaginal operation is distinctly to be preferred to the abdominal method which should be reserved for exceptional cases.

It is not alone in the mode of performing operations that our department of the profession has developed and is developing; evolution is also at work as regards ourselves and our professional status. We spring from the man- and midwife whose function it was to deliver women in labour, and more especially when the labour was unnatural or

difficult. As time went on he undertook the treatment of such uterine troubles as he could compass during, and apart from, the pregnant condition. As knowledge advanced treatment became more active and the man-midwife, now developed into the obstetric physician, enlarged his sphere of action and undertook operative work on women of a more strictly surgical nature until at the present time operative gynaecology, owing to the brilliancy of its results, has caused the obstetric physician to assume more and more the rôle of an operating surgeon with a tendency to recede from obstetrics. This evolution is now receiving official recognition: the title of obstetric physician is being changed in some general hospitals to that of gynaecological surgeon. The natural result will be that just as the general operating surgeon does not practise midwifery, neither in future will the gynaecological surgeon. Indeed, it is not in keeping with the fitness of things that the man who is constantly occupied in surgical work should attend labours. But as there must always be those who are exceptionally qualified to act as obstetricians the primitive usage will be reverted to and place will still be found for the obstetric physician who will be what the name indicates—a specially skilled man-midwife.

Surgery owes much to the gynaecologist who led the way in the performance of abdominal section. It is no small matter that the gynaecologist can justly claim precedence in thus dealing with this all-important region. It was the gynaecologist who showed how the abdominal cavity may be laid open and its contents freely dealt with; how large growths and integral portions of the anatomy may be removed and cysts filled with septic pus may be evacuated, all without rise of temperature or of pulse-rate and with a continuously tranquil peritoneum, that dreaded membrane of the older surgeon. The potentiality having been demonstrated, more and more boldness has been shown until the surgeon now regards an exploratory incision as an ordinary aid to diagnosis. Obviously all this would not have been possible without the antiseptic methods we owe to Lister, which, after passing through a phase of complexity and steam sterilisers, have now resolved themselves into the practice of bacteriological cleanliness of the patient, the hands of the operator, and of the instruments he uses.

Before concluding permit me to direct the attention of the society—and especially of those members who in the future may practise on the lines I have indicated—as pure obstetric physicians—to the immense benefit that would accrue to medical science by the study of an extensive and systematised series of observations of some subjects which are intimately associated with the practice of midwifery. I allude to prenatal diseases, especially those of specific causation and to the diseases of pregnancy such as eclampsia, blood diseases, and chorea. A closer investigation of prenatal diseases would lead to their more general recognition and treatment, which, in my opinion, would tend materially to reduce the birth-rate of the unfit. The study of these diseases would be furthered by the allocation of a few beds for the purpose in all maternity hospitals. In like manner the exceptional opportunities afforded to the gynaecological surgeon might be utilised in the study of cancer from its clinical aspect. By systematised investigation of each case that comes under notice and by massing together the facts obtained so as to facilitate subsequent reference much light might be thrown on this most important subject.

AN EXPERIMENTAL INVESTIGATION OF THE BUDDÉ PROCESS FOR THE PRESERVATION OF MILK.

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THE importance of a pure milk-supply is admitted by all but the difficulty of supervision of farms and dairies and the ignorance of many of their owners, the problem of transit, particularly in the hot weather, the unhygienic condition of the premises of many of the farms and smaller vendors, and, lastly, the universal custom of keeping and delivering milk in open vessels, instead of in closed bottles

(as is the custom in America and the Continent) render it almost impossible to obtain any ordinary milk in a condition which can be regarded as satisfactory, much less as safe. It is largely the insanitary conditions and methods which exist at the farms that have rendered the extensive use of preservatives necessary (I use the term advisedly). The initial contamination of the milk is such that in hot weather many millions of bacteria per cubic centimetre may develop in a few hours, and within 24 hours much of the milk delivered in London would, I believe, be unusable but for the addition of preservatives. I hope this will not be construed into meaning that I advise the addition of preservatives; I do believe, however, that under present conditions the moderate addition of preservatives is less dangerous than the use of a semi-patrid milk—it is the lesser of two evils.

Four conditions would much tend to mitigate the evil and do away with the necessity for preservatives. These are (1) strict sanitary measures in dealing with the milk at the dairy—i.e., in the milking, &c.; (2) the immediate chilling of all milk after milking; (3) the provision of refrigerator vans for transit; and (4) the sending of milk in closed bottles. These conditions, however, can only be obtained by a combination between the farmers in a district—that is to say, by coöperation. The initial expense of refrigerators, bottles, &c., is too great for the smaller farmers to incur and it is only by pressure brought by a large and united clientele on the railway companies that proper refrigerator vans will be provided and a reduction in freight for bottles (which is now much too high) will be obtained. However satisfactory the conditions may become at the farm one mode of treatment only will prevent the chance contamination of milk with the viruses of tubercle, typhoid fever, diphtheria, scarlet fever, &c., and that is some form of sterilisation. Treatment by heat, either in the direction of complete sterilisation or by pasteurisation, has been extensively used. The objection to sterilisation is that to be complete a temperature above 100° C. is necessary and this produces a marked flavour and undoubtedly diminishes the nutritive and digestive qualities of the milk. To pasteurisation, which consists in heating the milk to from 68° to 70° C., the same objection cannot be made; all non-spore disease germs are destroyed, the flavour is less altered, and the nutritive qualities are less diminished. But pasteurised milk is by no means sterile and its keeping qualities are not greatly prolonged unless the process is followed by efficient chilling. I am also informed that there is a considerable tendency nowadays to run the milk rapidly through the pasteurising apparatus instead of allowing the milk to remain at the proper pasteurising temperature for 20 minutes or so, as should properly be done. Such a procedure would necessarily allow many pathogenic forms to remain alive and would engender a false sense of security.

My attention was recently directed to the Buddé process of treating milk, invented and patented by a Danish engineer, Mr. Buddé, and now being applied extensively and on a commercial basis in Denmark and Sweden. During the summer of 1905 17 creameries or coöperative dairies in these two countries have each installed a plant for "Buddéising" and bottling milk. The principle of this process is as follows. The milk is obtained in as clean a condition as possible, and if it has to be kept for any time before treatment it is efficiently chilled, but usually it is treated soon after milking. A proper proportion of peroxide of hydrogen is added to the milk and the mixture is heated to from 51° to 52° C. for at least three hours. A temperature below 48° C. is not efficient and one above 55° C. should be avoided as this tends to induce changes in the milk. With the aid of the heating the hydrogen peroxide is completely decomposed into water and oxygen by an enzyme (catalase) present in the milk, and the oxygen at the moment of liberation being in a nascent condition acts as an efficient germicide. At the end of the process the whole of the hydrogen peroxide should have been decomposed, provided the right proportion has been added, so that no antiseptic remains, a small but inappreciable addition of water has been made to the milk, and the majority of the micro-organisms have been destroyed. The amount of hydrogen peroxide required to obtain this result is about 15 cubic centimetres of a 3 per cent. solution per litre of milk, so that the quantity of water added to the milk amounts to about 1.5 per cent., which, on a basis of 3 per cent. of fat, would reduce the percentage of fat to 2.85 in the treated milk, a reduction in the percentage of fat of about

0.05, an amount which may be regarded as negligible. The milk is treated in bulk and immediately bottled with suitable precautions and supplied to the public in the bottles, a fact which alone should commend it. The milk so treated is practically unaltered in appearance and flavour, the cream rises as usual, all ordinary non-sporing pathogenic germs are destroyed, and the milk will keep sweet for at least eight or ten days in hot weather.

The capacity of the natural milk to decompose hydrogen peroxide varies, presumably on account of variations in the catalase content. With some of the continental milk less than 15 cubic centimetres of the 3 per cent. peroxide can be decomposed and it is necessary in such cases to add something, e.g., yeast enzymes, which will decompose the excess of peroxide and render the treated product free from this agent. English milk, however, will decompose on an average 17 cubic centimetres of the peroxide per litre, so that there would be no need in this country to make any such addition; the milk itself would completely decompose the requisite quantity of hydrogen peroxide. Even supposing that a small amount of the peroxide did remain undecomposed it could hardly be in any way deleterious; the amount would be infinitesimal. I believe that small quantities are quite non-poisonous and non-deleterious and in the stomach any excess would immediately be decomposed. The enzyme "catalase" has been described by O. Loew¹ and the interaction between various enzymes and hydrogen peroxide has been investigated by Vanderwilde, Waele, and Sugg.²

An important consideration is whether the Budde process alters the nutritive qualities of the milk. Of this I have no personal experience, but Lindman³ states as the result of an extensive use of the "Buddeised" milk in cases of diarrhoea and digestive disturbance that it can be used with the greatest benefit in these conditions and that the nutritive qualities are unimpaired for infant feeding.

I may now give in detail the results of the experiments I have conducted with a view to test the efficiency of the Budde process. The milk was obtained fresh from an Essex farm, chilled at the dairy, and reached the laboratory usually at about 11.30 A.M.—i.e., some four to five hours after milking. It was brought in screw-stoppered bottles of one-litre capacity and on arrival at the laboratory was immediately dealt with. The method of procedure was as follows. Young cultures of the various micro-organisms on solid media were used; these were emulsified in sterile tap-water and the suspensions were allowed to stand for a quarter of an hour, so that the larger particles might settle. The milk in the bottles was emptied into clean glass flasks and from four to five cubic centimetres of the thick suspension of the micro-organism to be tested were added, and the whole was thoroughly mixed; the mixture was then returned to the bottles through a sterile glass funnel. The requisite amount of the peroxide (at the rate of 15 cubic centimetres of a 3 per cent. solution per litre) was next added, the bottles were closed, the contents were thoroughly mixed, and the bottles were wholly immersed in a water-bath kept at 52° to 53° C. Sufficient time was allowed for the contents of the bottles to attain a temperature of 51° to 52° C., and the heating was continued for a further period of from three to three and a half hours after this. Plates and cultures were made from the milk with the added micro-organisms before and after treatment so that the efficiency of the process could be ascertained. The preliminary mixing of the cultures and milk in flasks (and not in the bottles) was to avoid the chance of any of the micro-organisms becoming deposited in the thread of the screw in the mouth of the bottles, where the organisms might have been unacted upon by the peroxide, and at the end of the process might have contaminated the bulk of the milk and so have vitiated the results. Several tests were made to ascertain the effect of the heating alone—i.e., to some of the bottles no peroxide was added—but otherwise they were treated in the same manner as those to which the peroxide was added. Similarly, in other cases the milk without added micro-organisms was treated and tested. In all cases a much larger quantity of the infected milk was added to the test cultures, &c., after treatment than was used for the control cultures, &c., before treatment, and in nearly all cases each

experiment was in duplicate or triplicate—i.e., two or three bottles were treated and tested.

The following is a type of the method of experimentation adopted:—

Experiment VIII.—Bacillus typhosus (agar cultures). Sept. 6th, 1905. The test cultures were made on Conradi plates.

A. Controls before treatment.

Bottle 1. 1 loop (Conradi plate) = several typhoid colonies.
" 2. 1 " " " = a few typhoid colonies.
" 3. 1 " " " = " " "

B. After treatment.

Bottle 1 a. 0.1 c.c. (Conradi plate) = not a single colony.
b. 0.1 c.c. (" ") = " " " "
Bottle 2 a. 0.1 c.c. (Conradi plate) = not a single colony.
b. 0.1 c.c. (" ") = " " " "

Bottle 3 (heated, but no peroxide added).

a. 0.1 c.c. (Conradi plate) = number of typhoid colonies.
b. 0.1 c.c. (" ") = " " "

Experiment XIV. Bacillus tuberculosis.—As I was unable to obtain natural tuberculous milk the milk was infected in two ways and then treated. One method was to dry some sputum rich in tubercle bacilli in vacuo over sulphuric acid, to grind up the dry residue with water, so as to form a thin suspension, which was strained through muslin and added to the milk. The other was to make a suspension of a glyceric agar culture of a virulent bovine strain and add to the milk. The Guinea-pig test was alone employed.

Sputum suspension (Sept. 5th, 1905).

A. Control, before Treatment.

Guinea-pig 63 (1 c.c. injected). Killed Dec. 6th, 1905. Caseous glands and tuberculous nodules in the spleen and liver.

B. After Treatment.

Guinea-pig 32 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

Experiment XV., culture suspension (Sept. 5th, 1905).

A. Controls, before Treatment.

a. Guinea-pig 62 (1 c.c. injected). Died Sept. 29th, 1905. Tuberculous nodules in kidneys, liver, and peritoneum.

b. Guinea-pig 55 (1 c.c. injected). Died Nov. 28th, 1905. Tuberculous nodules in spleen, liver, and lungs. Inguinal glands large and caseating.

B. After Treatment.

Guinea-pig 60 (2 c.c. injected). Killed Dec. 5th. No trace of tubercle.

Experiment XVI. Sputum suspension. (Sept. 6th, 1905.)

A. Control, before Treatment.

Bottle 1. Guinea-pig 57 (1 c.c. injected). Killed Nov. 14th, 1905. Tuberculous glands and spleen.

B. After Treatment.

Bottle 1. Guinea-pig 45 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

A. Control, before Treatment.

Bottle 2. Guinea-pig 20 (2 c.c. injected). Died Sept. 23th, 1905. Tuberculous nodules in mesentery.

B. After Treatment.

Bottle 2. Guinea-pig 56 (2 c.c. injected). Killed Dec. 5th, 1905. No trace of tubercle.

Experiments XIV., XV., and XVI. conclusively prove that the Budde process destroys the tubercle bacillus in milk.

In all, two experiments were performed with the bacillus diphtheriae, two with the bacillus acid lactici, three with the bacillus coli, two with the bacillus typhosus, one with a paratyphoid bacillus, one with the bacillus dysenteriae, one with the cholera vibrio, one with the micrococcus pyogenes aureus, three with the bacillus tuberculosis, three with the bacillus anthracis (sporing), one each with the bacillus subtilis and bacillus mycoides (both sporing), two with the penicillium glaucum, and several to ascertain the reduction effected in numbers of the natural flora of milk by the treatment. In the treated milk a progressive increase in the number of organisms occurs as the milk is kept, but even after ten days the number is four-fifths less than in the original milk before treatment. On two occasions the acidity of the milk before and after treatment was determined by titrating with $\frac{N}{10}$ caustic soda and phenolphthalein

and was found to be unaltered. Several samples were tested (with starch and potassium iodide) after the treatment for the presence of a residuum of hydrogen peroxide but none was detected. The treatment was not found to alter in any way the colour, odour, taste, and appearance of the milk, and the cream rises in a normal manner after the treatment. Samples were tasted by a number of individuals and practically no alteration could be detected as a result of the process.

The conclusions which may be formulated from these experiments and observations are as follows:—
1. All the non-sporing organisms, pathogenic and non-pathogenic, dealt with—viz., the bacillus tuberculosis, the

¹ Bulletin, Department of Agriculture, Washington, 1900.

² Beiträge zur Chemischen Physiologie und Pathologie, Band v., Heft 11 und 12, 1904.

³ A paper read before the Society of Physicians of South Sweden, 1904.

bacillus diphtheriæ, the bacillus acidi lactici, the bacillus typhosus, the bacillus coli, the bacillus dysenterici, a paratyphoid bacillus, the micrococcus pyogenes aureus and the cholera spirillum—are destroyed by the process.

2. Sporing forms—viz., the bacillus anthracis, the penicillium glaucum, the bacillus subtilis, and the bacillus mycoides—are not destroyed by the process although reduced in numbers, the inference being that the vegetative forms are destroyed but the spores are not destroyed.

3. Although the heating *per se* may be efficient in destroying certain non-sporing organisms—e.g., the bacillus diphtheriæ, the bacillus typhosus, and the cholera spirillum—it is not so in all cases. Thus in one experiment the bacillus typhosus and the micrococcus pyogenes aureus survived the heating when no peroxide was added, and under similar conditions the bacillus acidi lactici survived in the two experiments in which this was tested.

4. The same fact is strikingly shown by the effect of "Buddising" on the natural milk—i.e., the milk without added micro-organisms. The reduction in numbers effected by heating alone is far less than with "Buddising."

5. "Buddised" milk is practically indistinguishable from untreated milk in taste, odour, appearance, and in the rising of the cream. No increase in acidity is caused by the treatment.

6. "Buddised" milk will keep perfectly sweet and apparently unaltered in odour, taste, and appearance for at least from eight to ten days in hot weather and for a still longer period in cold weather.

7. In milk obtained in the ordinary way without special precautions the micro-organisms are reduced by the Budd process over 99·9 per cent. In the milk kept at room temperature the small residuum of living micro-organisms multiplies daily and ultimately (after from 12 to 14 days) may cause the milk to go bad.

8. The distribution of the "Buddised" milk in closed bottles is in itself a great improvement on the routine system that obtains in this country of distribution in open vessels.

9. The method excludes all possibility of adulteration of the milk by the vendor before it reaches the consumer.

10. Properly carried out, the whole of the added hydrogen peroxide is decomposed at the end of the process and no trace of it can be detected in the treated milk.

If, as I am informed, the Buddised milk can be produced without necessarily raising the price to the consumer above the ordinary rates, and if the nutritive qualities of Buddised milk are unimpaired, of which there seems to be good evidence, the process appears to have a great future before it for infant, child, and invalid feeding and in the treatment of gastro-intestinal disorders.

In conclusion, I have to thank Mr. Richard Rythen of Broad Street House, London, E.C., who is introducing the process into this country, and Mr. P. Monrad, chemist to the Danish Budd Company, for their assistance in carrying out the above work.

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TWO CASES OF LEUKÆMIA TREATED BY THE ROENTGEN RAYS.

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As the effect of the Roentgen rays on leukæmia is attracting considerable attention at the present time I have thought that some notes of two of my patients suffering from this disease and undergoing this form of treatment may be of interest. Neither case is represented as being complete, as treatment is being continued at the present time.

CASE 1.—The patient, a widow, aged 50 years, had complained for about four months of progressive weakness accompanied by increasing enlargement of the abdomen; she had been losing weight and complained of sleeplessness. She had been previously a very healthy woman but had suffered from malarial fever contracted in Malta (Malta fever?) and also had suffered from sore throats. She had had three children, all of whom were living and healthy. In July, 1905, a diagnosis of leukæmia was made. At this time the patient was very weak and was rapidly getting worse; she complained of great

pain and tenderness over the region of the spleen. Her temperature ranged from 99° to 100° F. in the morning and in the evening from 100° to 103°; she also had occasional rigors. Her spleen was found to be enlarged considerably and reached beyond the middle line; the lower margin could not be felt above the pubes. A blood count taken on July 26th resulted as follows: erythrocytes, 3,047,520 per cubic millimetre; and leucocytes, 400,147 per cubic millimetre, giving a ratio of 1 white to 7·6 red corpuscles. A differential count was not taken. X ray treatment was at once commenced and carried out daily, Sundays excepted. It consisted of ten minutes' exposure of the splenic area, five minutes' exposure of the sternum, and ten minutes' exposure of the knees with a hard tube, taking about two to two and a half milliamperes on the secondary, the tube being about 12 to 15 inches from the skin. The patient had also intramuscular injections of arsenic in full doses; these were discontinued on Sept. 15th.

Blood counts were taken from time to time by independent observers. On August 1st the pain in the region of the spleen was much relieved and the patient slept much better. On Sept. 6th the general health had much improved and the patient declared herself as feeling altogether better. Her temperature was now rarely above 100° in the evening. On the 16th treatment was temporarily discontinued. She went to the country, returning on Oct. 3rd much better in general health. Daily treatment was again resumed. On Nov. 8th treatment was again interrupted for 14 days, being resumed on Nov. 23rd. Treatment daily from Nov. 23rd to Dec. 8th showed a further drop in the number of leucocytes from 72,300 to 32,200 per cubic millimetre. The patient's general condition is still improving, her weight has increased, and the size of the abdomen has diminished. The spleen is much smaller, reaching now to one inch to the left of the umbilicus and one and a half inches above the pubes.

Daily treatment is being continued and the following table illustrates the results of treatment to the end of December, 1905:—

Date.	Ratio of white to red blood corpuscles	Hæmoglobin (per cent.)	Red blood corpuscles (per c. mm.).	White blood corpuscles (per c. mm.).	Polymorpho-nuclear cells (per cent.).	Myelocytes (per cent.).	Other forms (per cent.).
1905							
July 26th	1 to 7·6	60	3,047,520	400,147	—	—	—
August 2nd	1 to 6·7	—	3,055,000	461,543	—	—	—
" 13th	1 to 6·3	57	3,150,000	459,000	40·0	39·2	20·8
Sept. 6th	1 to 7·5	—	3,200,000	425,000	—	—	—
" 16th	1 to 13·1	—	3,810,000	290,625	—	—	—
Oct. 12th	1 to 20·7	—	4,695,000	226,500	45·0	19·0	3·6
" 27th	1 to 34	79	3,975,000	117,000	—	—	—
Nov. 9th	1 to 63	81	4,550,000	72,500	51·2	34·8	14·0
Dec. 8th	1 to 141	—	4,550,000	32,200	—	—	—

CASE 2.—The patient is a young married woman, aged 23 years. A brief account of her illness and treatment has already been published.¹ The patient had suffered from epistaxis from childhood and had rheumatic fever at the age of 18 years. She was confined on Feb. 17th, 1904, and subsequently had severe post-partum hæmorrhage which was with difficulty stopped. On April 1st she noticed some swelling of the abdomen which continued to increase. She lost flesh rapidly. Menstruation had not reappeared after her confinement. She was admitted into Charing Cross Hospital on Sept. 10th, 1904, under the care of Dr. J. Mitchell Bruce. She was at this time very anæmic in appearance, her tissues were wasted, and the abdomen was greatly increased in size. Her spleen reached downwards to the pubes and extended laterally to within half an inch of the middle line. Its outline was ill defined; it was somewhat tense and on deep pressure was slightly tender. The urine was acid, of specific gravity 1022, and contained no albumin. Auscultation of the heart discovered well-marked aortic and mitral regurgitation. Blood examination showed: red blood corpuscles, 2,300,000 per cubic millimetre; white blood corpuscles, 1,440,000 per cubic millimetre; myelocytes, 34·4 per cent.; polymorphonuclears, 52·5 per cent.; eosinophiles, 6 per

¹ A case of Splenomedullary Leucocythæmia treated with X Rays, Medical Electricity and Radiology, April, 1905.

cent.; nucleated red corpuscles, 6 per cent.; poikilocytosis was fairly marked; hæmoglobin, 34 per cent. The temperature on the average fluctuated between 98° and 100° F. On Oct. 9th the patient was still unable to leave her bed and it was decided to try x ray treatment. Ten minutes' exposures with a hard tube were given over the splenic area only every day until the end of October with an interval of six days' rest after the first nine days of treatment. On Oct. 16th she was able to get up and on the 28th was discharged from hospital. A blood count taken on this date resulted as follows: red blood corpuscles, 3,020,000 per cubic millimetre; white blood corpuscles, 232,000 per cubic millimetre; and hæmoglobin, 37 per cent. Poikilocytosis was much decreased and the proportion of myelocytes was apparently diminished. The spleen was smaller, its lower edge being now one and a half inches less towards the pubes, and its whole outline was better defined.

Since her discharge the patient has been able to walk to the hospital and to attend for treatment as an out-patient. Exposures of ten minutes over the splenic area, sternum, and knees were given each day on alternate weeks. In December menstruation reappeared and was afterwards regular. In January a blood count showed: red blood corpuscles, 3,862,000 per cubic millimetre; white blood corpuscles, 93,000 per cubic millimetre; and hæmoglobin, 44 per cent. In February another count was taken as follows: red blood corpuscles, 4,750,000 per cubic millimetre; white blood corpuscles, 42,200 per cubic millimetre; and hæmoglobin, 46 per cent. The spleen was now much smaller. The patient had increased in weight, was looking better, could walk without fatigue, and could attend to her household duties. From this time on, however, she did not come regularly, her attendances as an out-patient numbered from five to nine each month, and although her general condition appeared to be satisfactory and she could easily perform her duties at home the result of blood examinations show that the improvement reached has not been quite maintained.

The following table shows the differential blood count at various dates:—

Date.	Ratio of white to red blood corpuscles.	Hæmoglobin (per cent.).	Red blood corpuscles (per c.mm.).	White blood corpuscles (per c.mm.).	Polymorpho-nuclear cells (per cent.).	Myelocytes (per cent.).	Other forms (per cent.).
1904							
Sept. 10th	1 to 1.6	34.0	2,300,000	1,440,000	52.2	3.4	13.4
„ 30th	1 to 2.1	32.5	2,360,000	1,110,000	—	—	—
Oct. 28th	1 to 13	37.0	3,020,000	232,000	57.4	30.2	12.4
1905							
Jan. 6th	1 to 40	44.0	3,842,000	96,000	61.0	27.0	12.0
Feb. 21st	1 to 112.5	46.0	4,750,000	42,000	63.0	23.0	14.0
April 4th	1 to 65	—	4,250,000	97,700	65.25	14.25	20.5
July 14th	1 to 22	70.0	4,040,000	183,000	—	—	—
Sept. 9th	1 to 20.6	70.0	4,170,000	202,000	59.3	18.3	22.4

In Case 1 it is to be noted that treatment has been systematic and regular from the beginning and that a steady and progressive rate of improvement is being maintained up to the present time. The general health is better, the spleen is smaller, the temperature is normal, the number of red corpuscles has increased, and the number of leucocytes has fallen from 400,147 to 32,200 per cubic millimetre. The ratio of white to red corpuscles has decreased from 1 to 6.3 to 1 to 141. The proportion of polymorphonuclear cells has risen and the proportion of myelocytes has fallen. Thus in all the characteristic phenomena of the disease there is marked improvement. What the final issue of a case of this type will be it is of course impossible to say, but from a study of the reported cases² there is ground for hope that with increased experience in treating this disease improvements in technique will be followed by considerable improvements in the attained results.

The second case is specially interesting as the patient was at first exceedingly ill and presented all the appearance of an extremely grave case of leukæmia. Whilst treatment was regularly and systematically carried out the improvement was very striking. The bedridden patient was so far restored

to health as to be able to resume control of her domestic duties and to walk to and from the hospital for treatment as an out-patient. The number of leucocytes was reduced from 1,440,000 to 42,200 per cubic millimetre and the ratio of white cells to red from 1 to 1.6 to 1 to 112.5. The number of red corpuscles increased from 2,300,000 to 4,750,000 per cubic millimetre. The patient gained considerably in weight and strength and the size of the spleen diminished. As so frequently happens, however, in hospital practice the patient, being in a condition once more to attend to her work at home, became careless and infrequent in her attendance and her clinical chart showed well how infrequent exposure to the x rays was accompanied by a slow but very perceptible increase in the number of leucocytes and a proportionate decrease in the total of red cells.

Theories as to the source of the curative effect of the x rays in leukæmia are no doubt interesting, but our knowledge of their therapeutic action must be indefinite until something more is known of the etiology of the disease. It is often assumed that the disease is microbic or parasitic and the general opinion at the present time seems to be that the x rays are non-bactericidal. I would like to point out, however, in this connexion that it is possible that the density to the x rays of the glass of which the culture tubes are made has not been sufficiently considered. Lead glasses are very dense to the rays and the glass used in the construction of the Crookes's tubes has to be specially prepared. The x rays therefore may yet be proved to have some bactericidal properties. It is possible also that some or all of the improvement noticed in the treatment of these cases may be due to some other emanations from the Crookes's tube and not to the x rays. Leucocythæmia may be, of course, merely an exaggerated leucocytosis—i.e., an increased formation of leucocytes—or it may be an alteration in the metabolism of cells formed in the ordinary way, which leads to their prolonged life in the body and so to their increased number. The analogy between this disease and sarcoma has been frequently pointed out and the effect of the x rays upon new cell formation of a malignant type is well known. The curative effect of the x rays may be then another instance of their power over the growth of tumour cells.

It has been stated that a too rapid diminution of leucocytes in leukæmia is associated with the production of toxin and the exhibition of high temperature. High temperature has been associated with this disease always and was described long before the introduction of the x ray treatment. The patient in the first case had rigors even before treatment was commenced. In this case also a drop in the number of leucocytes of 40,000 per cubic millimetre was noticed in 11 days without any ill result. My own experience has been that decrease of white cells is invariably accompanied by marked improvement in the general condition of the patient.

The effect of x rays upon pigment is interesting. Case 1 had some pigmentation before treatment by the x rays was commenced. The pigmentation was general and was probably due to arsenic which had been previously given. The patient stated that she was very susceptible to sunburn. After exposure of the spleen to the rays had been carried out for some time the skin over the area became quite negroid in appearance. Some desquamation has taken place since felt has been used and the skin is now much lighter in colour. The great difficulty in this form of treatment is the production of a dermatitis from continuous exposure to the rays. This has the disadvantage of interrupting treatment and is painful and troublesome to the patient. In many of the cases that have been reported it is noticeable that this incident has interfered with the continuance of treatment.³

It is a striking fact that in most of the cases of dermatitis arising in x ray workers the changes in the skin are often limited to the hand and wrist and are not seen beyond the margin of the coat sleeve. This circumstance suggested to my mind the question whether dermatitis could not be eliminated by protecting the skin by layers of substance penetrable by the rays, such as linen, cloth, &c. In Case 2 one thickness of linen (table cloth) was interposed between the tube and the skin. Since this has been done there has been no suggestion of dermatitis and treatment has certainly not been hampered in any way by the use of the linen. In Case 1 four folds of felt, each one-eighth of an inch thick, were interposed at the time that the diminution of white cells from 72,300 to 32,200 per cubic millimetre was noticed in 11 days. In order to allow of

² The X Ray Treatment of Leukæmia, Ledingham and McKerron, THE LANCET, Jan. 14th, 1905, p. 71.

³ Leucocythæmia treated by x rays, Brit. Med. Jour., July 1st, 1905.

larger dosage a heavy anode tube at a distance of 12 inches from the patient was used with a 22-inch coil, the amount of current on primary being 4 amperes, 100 volts. In addition to this, at the end of ten minutes exposure the tube was given as much current as it would stand for one minute. I think the rapid decrease in the white cells just mentioned was due to the extra amount of electric energy used and yet no dermatitis or rise in the body temperature was noticed. On the contrary, there was an extraordinary improvement in the patient's condition generally.

With such large doses of rays as mentioned above, if given in the ordinary way, a very severe dermatitis would undoubtedly ensue very quickly, with possibly severe ulceration of the skin. By my method of protecting the skin I hope to be able to eliminate the burning effects to some extent and at the same time to obtain the fullest benefit from the rays when used as a therapeutic agent. It has been frequently stated that dermatitis is not the product of the x rays but that it is due to the direct action of the high-tension current used to produce the rays. My experience so far strongly supports this contention. The use of protective layers over the skin in these cases tends to illustrate the benefit that may be obtained in a similar way in other diseases in which the Roentgen rays are used and in which the production of a dermatitis is not desired. I hope experiments in this direction will be made and the results noted, as if increased dosage without dermatitis can be obtained a much larger field of usefulness for the rays will be opened up.

The effect of continued irradiation of other organs in relation to the spleen is not as yet accurately known. So far no case has been reported in which any deleterious effect has been noticed. The indefinite manner in which the dosage of the rays is of necessity stated in reporting the above cases is a matter for regret. It has been claimed that a satisfactory method of measuring the radiant energy has been discovered. The amount of rays produced in a Crookes's tubes is, however, dependent upon a number of factors, all of which are not within control. The tubes vary so enormously in efficiency that the quantity of current used, as indicated by a milli-ampere-metre on the secondary of the coil, can give no idea of the amount of rays produced, and it is well known that the penetrative power of the rays alters very considerably during an exposure of any length of time. The measurement of the amount of rays produced and of their penetrative power is a problem which still awaits solution.

Progress in radio-therapy has been so rapid that it is difficult to realise all that has already been accomplished. With such results, however, as are already obtained in leukaemia and in other diseases it is difficult to be anything but optimistic with regard to the future. Increased accuracy of dosage, improved methods of administration, and the elimination of all possible elements of risk to the patient are all points in which we may certainly expect advances to be made, with an almost certain expectation of a still wider field of usefulness for the Roentgen rays.

Weymouth-street, W.

"INTERRUPTED CIRCULATION" AS A THERAPEUTIC AGENT,

WITH ILLUSTRATIVE CASES OF RHEUMATOID ARTHRITIS.¹

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[AFTER a few preliminary remarks and a brief allusion to his previous paper² under the same title, containing a reference to Harvey Cushing's³ successful use of the tourniquet in a case of Raynaud's disease, and to George Oliver's⁴ pioneer work in the study of tissue lymph in its relation to the circulation, Dr. Ewart commenced the main portion of his paper by describing the technique employed, in the following words:—]

A brief account of the procedure (which is essentially the same as in operations) had better precede the notes of the

cases in which it was applied. In the absence of an Esmarch's tourniquet the simplest substitute is indiarubber tubing of suitable thickness, which is tightened round the limb in single or double loop outside a slight protecting pad. The tube can either be simply drawn tight, both ends of the loop being held, or else coiled over itself to any degree of tightness. As a preliminary the limb is to be rendered anæmic, the patient being in the reclining posture. In many instances the profound anæmia obtained by Esmarch's bandage need not be resorted to, though it is an essential for the best results, but the raised limb must be squeezed empty and kept elevated until after the application of the tourniquet. The relative duration of the constriction will also influence the result and will need to be varied according to the nature of the case. In my hands the shortest has been 30 seconds and the longest from three to five minutes. I have not exceeded six applications at one sitting, with a duration of two minutes each and with intervals of from one to two minutes. Three applications at each sitting may suffice in most cases and two sittings daily may be desirable. It is important to liberate the artery suddenly; and a distinct advantage is gained by lowering the limb into the vertical position, if this can conveniently be done, just before removing the ligature. With sufficient care the risk of any damage from excessive pressure at the seat of ligature is easily avoided. None of the cases hitherto treated have presented the slightest complication referable to the skin, to the vessels, or to the nerves. It need hardly be mentioned that inflamed or tender nerve trunks are an absolute contra-indication just as much as senile and calcified arteries.

THE CASES.

The cases belong to the following groups: (1) Subacute, subpyrexial synovitis, persistent or relapsing, in young subjects of rheumatic tendency; (2) deforming soft puffy nodular arthritis in women, with chronic quiet intra-articular and peri-articular effusions and thickenings; and (3) late massive arthritic thickenings, with articular rigidity or with much stiffness. The treatment was suspended in one case only—that of a stout, florid man of gouty temperament with chronic effusion and synovial thickening of the right knee of eight months' duration. As no visible reduction of the swelling was obtained after three sittings the further application of the method was postponed till other forms of treatment had been given a trial.

[Cases 1, 2, and 3 were those of acute or subacute relapsing rheumatoid arthritis, all in young women. They were treated in June and July, 1905, and all improved while under treatment; since their discharge, however, they have not been seen again.]

CASE 4. *Chronic rheumatoid condition, with acute painful seizures of fixation of joints and muscles.*—The patient, an unmarried female, aged 52 years, had always been healthy, in spite of a gouty tendency, but of late years she had been increasingly liable to acute rheumatoid swellings of the joints and stiffness of the muscles. In the autumn she had quickly recovered from her symptoms during a stay abroad; on returning to London she was seized the same night and rendered quite powerless by stiffness and pains, from which she slowly recovered. Her present attack, the worst she had ever had, began in April, 1905. When she came under treatment in June the very severe pain which she had suffered, apparently from acute neuritis, over the inner aspect of the head of the left tibia was less intense, but there were great aching and tenderness of the swollen left knee and of both hands, the shiny skin of which seemed to be too tight for the enlarged and stiffened phalanges. The temperature was normal or only slightly elevated at times. General treatment by saline laxatives, by colchicum and mercury, and local applications such as in particular of the compound liniment of iodide of potassium, did good. Neither these measures, however, nor massage made so marked and rapid an impression upon the stiffness, the swelling, and the pain as the treatment by interrupted circulation which was applied for upwards of three weeks, and the efficacy of which was demonstrated by limiting its employment to the left arm first, then to both arms, before it was applied to the left thigh. Great relief was obtained in the three limbs, with considerable though not complete loss of swelling. The patient was then sent to Aix to consolidate her recovery.

CASE 5. *Chronic deforming rheumatoid arthritis with effusion and rigidity, but without ankylosis.*—The patient, a married woman, aged 37 years, thin, pale, and nervous, of

¹ A paper written in July, 1905, and read before the Royal Medical and Chirological Society on Jan. 25th, 1906.

² The LANCET, August 13th, 1904, p. 422.

³ Journal of Nervous and Mental Diseases, November, 1902.

⁴ The Oliver-Sharper Lectures on Recent Studies on the Tissue-Lymph Circulation, THE LANCET, April 30th (p. 1175) and May 7th (p. 1272), 1904.

the type known as irritable weakness, but visceraally sound and free from catamenial irregularities, came under treatment in June, 1905. She was then very feeble, stiff, and crippled in her knees and ankles (chiefly on the left side), and in her hands, which presented a wet palm and marked ulnar deflection. The finger-joints of the left hand were abnormally loose, those of the right showing more thickening, particularly the middle and ring fingers, the latter with a distinct float-shaped interphalangeal joint. The wrist-joints were thickened and presented soft synovitic and puffy nodular swellings, with much stiffness, tenderness, and limitation of movement. The patient's expression and attitude were those of helplessness and distress. This condition was the climax of progressive symptoms of four and a half years' duration. The first symptoms after a wetting followed by a prolonged chill in church had set in suddenly in January, 1901, with painful swelling, numbness, and stiffness of both hands, and with severe pains over the whole body which kept her in bed for 14 days. From that date onwards she was never free in some form or other from rheumatic pains or stiffness. She continued to attend to her avocations, often, however, with considerable difficulty; and the effort told severely upon her nervous system, which was naturally delicate, until she lapsed, in 1904, into a condition analogous to neurasthenia, for which she was treated in November, 1904, with hot sulphur baths and ferruginous waters without much or any benefit, and she seems to have then suffered from increased weakness and loss of flesh. The view was taken at that time and since that the arthritic condition was of neurotic derivation and under neuropathic influence. In September, 1901, the recurring painful red and shiny swellings of the right hand had been diagnosed as "rheumatic erythema." The same diagnosis was also given when she was seen in October, 1902. In the interval she had been confined, in May, 1902, of her second child, and had undergone much fatigue. Her first pregnancy, 12 years ago, had been marked by the onset of dental decay, which eventuated in the extraction of seven teeth from the upper jaw and of four molars from the lower jaw at a comparatively recent date. For the last 14 years her residence had been on high ground, where the air was bleak and the water was chalky. Her feet began to suffer during a stay in Africa in 1904, and walking became very difficult owing to the pain, stiffness, and swelling which seemed to affect the whole foot as well as the joint of the great toe. Her condition since then had oscillated without any permanent improvement. Although she was better at the end of the winter spent in the Riviera, the cold wet weather which she encountered on her return determined a severe recrudescence. The knees, particularly the left one, became swollen and very painful and the feet also swelled. The left knee had remained much swollen as a whole and fixed but particularly tender and puffy over the inner aspect of the head of the tibia. The right knee was almost normal in size and movement.

The treatment was directed, as in Case 6, to the husbanding of the general strength and to a general hygiene of the skin, muscles, and viscera, with fairly good results. After a period of rest in bed and of massage, which was of service for the general health, the treatment by interrupted circulation was applied to the right arm first as this was the worse affected. The effect upon the puffy swellings was decided and rapid. They disappeared, as in the cases of subacute rheumatism. After a few days the left arm was also submitted to daily treatment with similar results. The treatment was kept up steadily, and is still kept up, with a view to influence if possible the thickening around the bones. Not only the patient herself but all those best able to judge (including the husband after an absence of three weeks) were agreed that the size of the wrists and of the float-shaped knuckles was perceptibly reduced and the freedom of movement was greatly increased. The left knee, although getting all the advantage that general treatment, local applications, and rubbing could confer, had remained almost as greatly swollen as before, very tender, painful on attempted movement, and incapable of complete extension. The interrupted circulation treatment was at last resorted to three weeks before the date of this report and is still being applied. The progress made during that interval has been great, the patient noticing first a relief and subsequently a disappearance of the pain and tenderness, whilst to onlookers the diminution in the general swelling and the return to a more natural configuration and to greater mobility are quite obvious. As a result of these gains (within seven weeks),

for which the other instalments of treatment are also doubtless, in great measure responsible, the patient has largely recovered from her depression and from her almost melancholic frame of mind and is looking forward to continued progress towards recovery.

CASE 6. Osteo-arthritis with fixation.—The patient, a female, aged 56 years, married, was admitted into St. George's Hospital on June 14th, 1905, in a crippled condition, not having been able to walk (or latterly to stand) without assistance for 18 months past owing to fixation of the knees in a semiflexed condition and to much limitation in the movement of the ankles, and being moreover disabled in the upper limbs by complete fixation of the right elbow and partial loss of movement in the left elbow and by complete fixation of both wrists. Her mother had suffered from rheumatism. She herself had never had rheumatic fever or any serious illness and was fairly healthy-looking for her years. The menopause had occurred at the age of 53. For the last 12 to 14 years the joints had gradually swelled and afterwards become stiff, without pain except on movement; the first joints to be affected were the metacarpophalangeal joint of the index finger and the metatarsophalangeal joint of the great toe on both sides, all at one time. She had been under treatment during nearly the whole period without improvement. On examination no evidence was found of any visceral disease. There were no teeth in the upper jaw and few in the lower. The temperature was normal; the pulse-rate was 96 and the respiratory-rate was 24. The first, second, third, and fifth metacarpophalangeal joints of both hands were swollen, with lipping of the cartilages and grating. The proximal and middle phalanges of the fourth and fifth digits and their joints were swollen. There were ulnar deviation and much limitation of movement of the fingers. The right thumb was rigidly fixed at its proximal joint. There was much wasting of the interossei and of the muscles of both arms. Both knees were enlarged, chiefly the left, and grated on any attempt at forcible extension. The first metatarsophalangeal joints on both sides were swollen, the ankles and tarsal regions were swollen and somewhat rigid, and there was some fibular deviation. The hips and shoulders were comparatively free within the smaller range of movement and the spine, neck, head, and jaw were quite free. The patient could thus be placed in the sitting as well as in the recumbent posture, but in both positions was otherwise helpless.

The treatment included, besides cutaneous hygiene and laxatives, full doses of the hypophosphites and of the glycerophosphates of calcium, iron, and sodium, two ounces of olive oil and half an ounce of whisky every night, a full and suitable diet, massage for the muscles and passive movements of the moveable joints, extension of the knees by weight and of the elbows by elastic traction (to facilitate which my house physician, Mr. V. Hetherington, constructed a convenient apparatus), continued flexor elastic traction for the wrists and the encouragement of active movement, which had previously been limited to a feeble waving of the fingers and to movements of the head and shoulders. The "interrupted circulation" treatment was first applied to the right arm only, as this was the worst ankylosed—namely, one sitting every other day with three "turns" of two and a half minutes' duration. But complete anaesthesia of the limb could never be obtained and the forcible manipulation of the rigid joints during the anaemia—one of the chief features of the treatment—could only be applied very gently on a small scale. Nevertheless, distinct improvement was secured after three sittings, and on June 30th slight mobility had been restored to the rigid wrist and elbow. The treatment was later applied to both arms with daily sittings, and finally to the left thigh. Previously, however, Sir William H. Bennett, after forcible treatment under an anaesthetic (on July 18th), had expressed an opinion that the left knee would never be perfectly straight. Most of the joints were moved that day with much creaking and grating and both wrists were again moved under gas on July 28th. But on both occasions the advantage gained seemed to be lost again during the several days' rest obtained by the surgical interference. Meanwhile the general strength and condition continued to improve and on August 9th the patient was able to stand and a few days later to walk as far as the lavatory. Daily systematic treatment of the arms and of the left leg was applied more regularly and efficiently after August 15th with progressive improvement. But before

that day the patient herself was conscious of the diminution in the size of the heavy wrists as well as of an increased mobility of the joints. The left knee also was now perceptibly less massive. Further progress will be reported later.

THE IMMEDIATE EFFECTS OF THE APPLICATION.

In each of the three stages of the procedure we have to keep separate account of the objective as well as of the subjective effects.

1. *The application of the ligature (with emptied veins)* gives rise to the familiar appearances well known to surgeons. The proof that the ligature has been effectively applied is the continued pallor of the limb and the falling of the superficial veins to fill again. As regards subjective effects, there is no pain but only a sensation of pressure at the seat of the ligature, provided no accidental pinching of the skin between turns of the tubing has occurred, and this, of course, should be carefully avoided. No immediate change in sensation is usually experienced below the ligature.

2. *The period of anaemia*—In most cases no change is perceptible in the appearances beyond a steady increase in the pallor of the skin during the first few seconds. In rheumatoid cases the softer puffy synovial and periarthritic swellings may sometimes be actually seen to have subsided after a minute or two, though some of the swelling may afterwards return when the ligature is removed.

The subjective effects vary. In some individuals there is distinct numbness rapidly passing into anaesthesia. In others the numbness and loss of sensation are delayed or the fingers or toes may retain almost unimpaired sensation throughout the short period of artificial anaemia. In one particular all patients agree. The painful or tender joints are made easier. Pain and tenderness may even entirely disappear. At the same time there is a feeling of recovery if some degree of power for active movement; and when the stiffness is not due to any firm adhesions patients will sometimes spontaneously test the joints by active movements. On the other hand, no painful or discomforting sensations have ever been complained of even during the longest sittings employed (upwards of four minutes).

3. *The removal of the ligature* is followed by a visible bright blush of the skin and nails. Never absolutely immediate this occurrence is preceded by an interval which varies in different subjects and is also apt to vary at different sittings in the same subject. This variability has its clinical importance as probably pointing to differences and variations in the function of the vaso-motor mechanisms. It is also worth mentioning as an instance among the many speculations and studies which are opened up by this method. Together with the blush there also occurs the objective symptom of increased local heat. And there may be a slight visible return in some of the soft parts of the fulness which had disappeared, as, for instance, at the back of the hands, in the interosseous spaces, and about the wrist.

Subjectively, the return of the circulation is always grateful to the patients. They usually dwell upon the pleasant warmth felt to pervade the limb. I have never heard a complaint of any painful sensation, much less of that severe pain which is often associated with the thawing of frost-bitten extremities. It is important to note that the marked relief from pain and tenderness obtained during the period of anaemia is not entirely evanescent, but that the limb remains permanently "easier."

THE CLINICAL RESULTS.

The therapeutical results obtained as regards the arthritic condition have been invariably satisfactory in the cases hitherto treated. Sometimes perceptible even to casual observers they have always been obvious to the patients themselves (see cases). No complications or untoward effects of any kind have been observed. The results may be briefly summarised as follows:

1. The recent puffy swellings in Group I were rapidly amenable to a few applications and in one case to a single application.
2. The inveterate puffy swelling associated with fibrous, cartilaginous, and bony thickenings was sometimes visibly influenced during the application. Its almost complete disappearance after a short series of sittings revealed the articular deformities in their sparer nodular outlines.
3. The periarthritic thickenings were slower to yield but gradually diminished.

4. The thickening of cartilages and of the joint ends of bones may conceivably be found to yield to prolonged treatment. At any rate, some reduction has been observed in the diameter of the float-shaped knuckles and of the swollen wrists and knees in Case 5. But how much of this fining down may have been confined to the periosteum cannot be decided without more searching observation by means of systematic radiography.

5. The great improvement secured with the help of this method in the condition of the articular surfaces in conditions of absolute rigidity from adhesions, both as regards restoration of movement, diminution of cracking or grating, and actual reduction in the size of the joint as a whole, is evidenced in Case 6.

6. In connexion with the latter case attention may also be called to the fact that in limbs so long disused all the tissues must benefit indirectly from the restoration of movement, in addition to any direct advantage conferred upon them by the tourniquet.

GENERAL REMARKS.

The phenomena which have been described in this paper can be easily verified by any observer and they seem to furnish a sufficiently firm basis for clinical action. But their adequate explanation would be very difficult, nay, impossible, at this stage, and, moreover, it would be almost wholly a study in pure physiology. Only few words need therefore be devoted to theory and inference. We seem to be dealing, as previously suggested, essentially with the vascular mechanisms, although the nerves must not be lost sight of. Their terminal fibrils receive a large share of the peripheral vascular effects. They are also immediately concerned in any associated vaso-motor changes and in any loss or depression of sensation. Within the domain of the vascular system an instructive contrast is afforded by Bier's method of "passive congestion" which aims at overcharging the limb with venous blood and with venous plasma by closing the superficial venous outlets by a light ligature exerting but little pressure upon the arteries. The aim in "interrupted circulation" is, on the contrary, to drain the limb of as much venous blood and venous plasma as possible and to furnish it with as fresh an arterial supply as can be obtained. The central facts in Bier's method are the dusky swelling and the vascular turgor. Here the most striking appearances are the anaemia and the subsequent arterial flush; and they represent distinct and, to a certain extent, opposite events which can be broadly defined as "adsorption events" and "stimulation events."

The "adsorption events" are rendered manifest in the group of cases under consideration when the shrinkage which takes place in the synovial effusions or in the softer local swellings chances to be seen or, as is sometimes possible, is verified by measurement during the time of the application of the tourniquet. The inference is that, under the conditions of the experiment, the balance of circulation between the capillaries and the tissues is altered and that, like an imperfectly saturated sponge, the capillary network tends to soak up any surrounding fluid. This view seems to be justified when we watch the capillary circulation in an ulcer of the leg. We then witness a gradual emptying of the capillaries which begins soon after the tourniquet is applied and continues to increase for many seconds, until the red granulating surface is almost quite pale. What has become of the blood? Is its local withdrawal due to a redistribution of the capillary contents of the more superficial and of the deeper districts? Or is it merely due to the blood being sucked up by elastic aspiration into the partly emptied arterial and venous trunks? The slow and gradual establishment of the capillary ischaemia fits in with the view that it may be due to the relaxation of an initial extreme vaso-constrictive spasm, with partial reflux into the re-expanding arteries. And we should not forget that at the same time the empty veins must also claim their accustomed influx. A third explanation which would assume the occurrence, as in Bier's method, of an escape of some of the plasma into the tissues, seems to be inconsistent with some of the appearances as well as with the probabilities.

The "stimulation events."—These may be summed up in two words—"arterial irrigation" and "arterial movement"—which are a welcome sequel to the venous drainage of the limb. Anaemia, it is needless to point out, cannot ever be constructive; any beneficial effect from a sudden withdrawal of the nutrient blood could only be explained

indirectly through its alternative effect upon the nerves, as a nerve shock. It may, nevertheless, as previously suggested, serve a quasi-negative nutritional purpose. Not unlike forced expiration, which expels some oxygen from the alveoli, together with less useful gases, the soaking up of the plasmatic juices makes room for a freshness of supply not otherwise obtainable. Beyond this the local anemia cannot avail to assist nutrition, for its continuance would mean "necrosis" if absolute and "atrophy" if only partial. The vitalising effect which must belong to a full supply of pure arterial blood under full pressure requires no comment, except, perhaps, a reference to the interesting fact that owing to the blood-forming properties of bone marrow this local advantage may be a gain to the general nutrition.

It would occupy too much time to discuss the effects upon the general circulation and upon the general blood pressure which may result from the removal of the tourniquet; they are probably opposite to the consequences of its application. But there is another local influence probably not devoid of importance. In some instances the suddenness of the arterial flush is well marked and suggests that each of the emptied arterioles and capillaries receives as it were a "ramming" charge. Any sudden mechanical effect of this sort is unattainable in the spontaneous variations of the circulation. The impact conveyed to the capillary walls cannot fail to be communicated to the contiguous cells as well as to the fluids in which they are bathed and this "cellular vibration" will be carried wheresoever capillaries extend, even into the inaccessible recesses of bone, in literal realisation of the poet's conception:—

"Ossa tremor." per Ima cucurrit

In conclusion, to meet the possible objection that this method is artificial or unnatural it may be said, not altogether in metaphor, that it is a modification of the familiar treatment by massage. It has just been suggested that interrupted circulation includes an intimate micro-massage of the tissues, but it might almost be added that ordinary massage owes some of its efficacy to the fact that its performance entails a definite though very brief interruption of the circulation at each spot influenced by the pressure of the hand.

I propose to deal in a future communication with the results obtained by systematic treatment in chronic ulcers. The main purpose of this paper, as was stated at its commencement, is to call attention to the principle of "interrupted circulation" as a definite therapeutic agent and to the evidence as to its efficacy, and does not include any attempt to urge its adoption. Much remains to be made out as to the physiological mechanism, as to the advantages and drawbacks, and as to the scope in practical therapeutics which belong to that principle, but above all as to the most practical form under which it may eventually be applied. Upon all these matters I must reserve an opinion until further observation and the help of the experience of other workers shall have matured our conclusions.

ADDENDUM (JANUARY, 1906).

Further Report on Cases.

CASE 4.—This patient has not been seen recently, but she reports that although she has not entirely lost the articular thickening and stiffness she has maintained the advantage which had been secured during her treatment in London, and her after-treatment at Aix-les-Bains, and she is able to follow her avocations.

CASE 5.—In this case, which ceased to be under my observation soon after this paper was written, the tourniquet treatment was resumed after the patient's return home and continued at intervals; but she is unable to report any substantial improvement in the condition of the knee from this treatment or from any of the other remedies which have been resorted to. The local treatment was discontinued because she complained of increased aching supervening in the knee some hours after its application. She writes that she is still unable to walk owing to the painful swelling and stiffness of that joint.

CASE 6 (exhibited).—This patient has remained continuously under observation. There has been marked liability in damp weather to temporary aching and soreness of the joints, with increased stiffness, which have needed special relief by medication. Nevertheless, she has lost none of the ground which she had gained and has continued to

improve in general health and in capacity for movement. She is no longer a cripple, walks rather stiffly, but without crutch or stick, and "she can do everything for herself." But the knees are not yet straight and the right elbow has only a limited range of movement, apparently owing to the obstruction of a bony outgrowth. Comparatively little movement has been regained in the wrists. These joints are smaller and are slowly improving, but their tendency to become fixed if strong passive movement should fail to be applied day by day has not yet been overcome. The mobility of the fingers continues to improve, greatly owing to the patient's own persevering exertions, the beneficial effect of which has doubtless had a considerable share in the benefit which she has secured during her prolonged stay in the hospital.

[As additional cases there were shown two cases of acute gonorrhoeal arthritis and one of acute sprain, also a case of subacute and one of chronic rheumatoid arthritis, in which manifest benefit was derived from the application of the tourniquet.]

CONCLUDING REMARKS.

Further observation in the cases narrated and in others confirms the estimate taken in this paper of the efficacy of the method in reducing the swelling and the pain associated with the intra-articular effusion of synovial fluid or the peri-articular effusion of lymph. The immediate relief afforded in the cases of acute arthritis, whether rheumatic or gonorrhoeal, and of sprain in which it has been tried, is equally striking. But in joints chronically thickened or fixed the improvement reported has not hitherto resulted in any complete cure.

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SOME EXPERIMENTS IN HYPNOSIS.

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(With a Brief Account of a Demonstration given before the East Sussex Medical-Chirurgical Society on Dec. 19th, 1905.)

CONSIDERING hypnotism from the point of view of the unbiased inquirer it must be admitted that he is justified at first in feeling somewhat sceptical about the whole matter. The fact that the term "hypnosis" implies either sleep or some condition resembling sleep is likely to be a source of difficulty to the unpractised operator. For although the stages of hypnosis have been very variously described, yet there is a general opinion expressed that an early stage of wakefulness occurs followed by a later condition of sleep of varying depth. One reads that in the early stages the subject is fully aware of everything that is taking place about him, and, indeed, beyond some feeling of drowsiness his condition in no way differs from the normal. Even in a comparatively deep stage of hypnosis he may be quite conscious and subsequently retain a perfect recollection of all that has occurred during the experiment. Thus far it is very difficult to understand in what this "hypnosis" consists. The fact that a person feels some rigidity of his eyelids or even temporary inability to lift them when told he cannot do so may only imply that slight confusion of muscular action which can be produced in almost anybody by very suddenly telling him to put into action some particular group of muscles. Even when actual rigidity (catalepsy) of a limb results from suggestion in the early stages the inexperienced operator cannot feel confident that he is not being deceived by the willingness of his subject or even by the subject's self-deception. It was just this difficulty with which I was confronted when first attempting to produce the phenomena of hypnosis. Indeed, it is a difficulty which always appears when the matter is discussed by the inexperienced. So much so that experiments may have to be discontinued through want of confidence in one's subjects as happened in my own case some time ago. However, after a careful study of the literature dealing with hypnotism, I again determined to carry out a series of experiments which may be of interest to early students of hypnosis as exemplifying the difficulties which at once beset the path of the worker in this field of

psychology and showing how they were cleared away in one particular instance. These experiments were conducted at the East Sussex Hospital, Hastings, the patients being porters and patients of that institution. Numerous experiments were made with each subject, all observed phenomena being recorded at the time. I give notes of representative results obtained in each instance.

The method used at first was fixed gazing at a small polished disc set in the centre of a larger disc of ebony. But it was soon found that by diverting the subject's attention to one hand which I slowly moved from the height of about 18 inches from the forehead down to the level of his eyes and then rapidly past them hypnosis was as readily produced in susceptible people. Sometimes the condition could be better induced in the first instance by placing the whole hand firmly on the head and vigorously pressing the centre of the forehead with my thumb, the subject being seated in a comfortable chair with a head-rest.

Experiments with Subject 1.

H. S., a porter, formerly a soldier, aged 29 years. After several unsuccessful attempts to produce rigidity of the eyelids by pressing with the thumb on the centre of the forehead it was suddenly found that hypnosis had been induced and he was now unable to open his eyes against my command. Rigidity was then readily produced in the arms and the mouth was held firmly open and fixed when appropriate suggestions were given. These results were obtained several times and in none of the experiments did he lose consciousness, being afterwards fully aware of all that had occurred. He described an unaccountable feeling of "stiffness" and inability to move certain muscles when rigidity was suggested. This is evidently the condition of "catalepsy" described by all writers on hypnosis and can be most rapidly induced by directing the subject's attention to any part by gently stroking it. I also found that I got somewhat better results by now using Braid's method of fixed gazing. And as the hypnosis became deeper at each attempt I took careful notes of a series of prolonged experiments, as follows:—

Experiment 1.—The subject went into a light sleep but seemed to be quite out of touch with me. When roused he said that he had been dreaming about his wife and child. He readily again went into a sort of trance condition but nothing further could be done with him. He did not move out of his chair or speak when told to do so. He was awakened readily.

Experiment 2.—This was carried out in the presence of several witnesses. The man was very nervous and had some difficulty in concentrating his attention. Eventually he went to sleep and it was suggested that he was now in my sitting-room cooling the fire. He awakened when told to open his eyes. He said he had been dreaming that he was in my sitting-room reclining in an armchair in front of the fire.

Experiment 3.—He closed his eyes after gazing at the disc for about 60 seconds. I then told him to sleep more deeply and yet more deeply, repeating the suggestions several times. He was then allowed to rest quietly for a few minutes and was then told that when he opened his eyes he would find himself in the entrance-hall checking the admission of visitors (this formed part of his usual work). He opened his eyes when so told and on being questioned said he was in the hall; he seemed very confused and I could get no clear idea of his impressions. He was then given a copy of the Royal Magazine and told it was the patients' admission-book. He agreed that it was and I told him to look up the last entry he had made in it. He said it was the name of a patient. (I subsequently ascertained that the name which he gave was correct.) I pinched his skin and he did not flinch. He would not move about when told so to do but relapsed into a deeper sleep. I had to rouse him by shaking and shouting at him but he remained in a very confused state for about a quarter of an hour with drooping eyelids and tendency to sleep again. He complained of great coldness of the skin. I then told him that in future he would at once awaken when I either blew in his face or clapped my hands. He had completely recovered himself by the end of half an hour.

Experiment 4.—On the next day he seemed somewhat nervous and the first attempt failed, so I told him to look steadily at my right hand and in a few seconds his eyes became heavy. I then said, "Now your eyes are heavy." He replied, "Not heavy enough yet, sir." So I let him gaze a little while longer, when he let his eyes close. This closure

was evidently hastened by a pass made in front of his eyes. I then said, "Now sleep more deeply." He was allowed to rest quietly for about two minutes. It was then suggested that he would find himself in "Casualty" assisting with a case that had just been brought in. He opened his eyes at command and said that he was in the casualty room and that he could see an injured boy lying on the couch, but he would not move from his chair at suggestion that he should assist in moving the boy. He was then told to forget that scene and *analgesia* was suggested. He did not feel the prick of a sharp needle on either hand. His limbs remained fixed in any position I placed them. This is evidently the "flexibilitas cerea" of various authors. He was then given pen and paper and told to write his name and address, which he did very slowly but correctly. I next told him that he would awaken immediately at a given signal, which he did. He complained of intense surface coldness, shivering slightly, but remembered nothing of what had occurred during the experiment.

Subsequent experiments with H. S.—Space will not permit me to give full notes of all the experiments made with this man. I found him more readily amenable to suggestion at each sitting; he was quite fresh when awakened and suffered no after inconvenience. Various hallucinations were readily produced and he would go through various scenes suggested to him. It was found also possible to change his idea of time and of his position in life. On one occasion I told him he was an undertaker and he gave quite a rational explanation of how he had given up his situation as a porter and joined an undertaker in business. Post-hypnotic influence was attempted with great success as shown by the following instances: 1. On one occasion he was told that when he awakened he would go into the main corridor and turn out the electric light. It was about 9.15 p.m. When roused he had no memory of what had been said to him but he followed me through the main corridor where I left him. Watching him from a distance I observed him standing for some minutes looking first at the electric light and then at the clock. He was again very dazed and drowsy. I approached and asked him what the matter was and he replied that he had just had a very curious impulse to switch off the light. He said that it was somewhat extraordinary as it was not his duty ever to turn out that light, and in any case it was an absurdly early hour at which to do so. 2. During another experiment he was told that when awakened he would go into a certain ward, ask for pencil and paper and then write "God save the King." Having roused him I went away and quickly found my way to the ward in question. In a short time H. S. appeared and in a very confused way asked for pencil and paper which were provided for him by the sister in charge who expressed surprise at his request. He became more dazed and on watching him carefully I felt convinced that he had spontaneously passed into a fresh condition of hypnosis. He slowly wrote the words "God save the King" and then at once became his normal self. Taking up the paper he laughed in an amazed way and said, "Well, I seem to be getting jolly loyal." He could in no way explain why he had acted as related. 3. In another case an act was carried out some 14 hours after hypnosis as suggested, the night having intervened. In each instance the man's manner and actions led me to suppose that a fresh hypnosis spontaneously occurred at the suggested time of action, during which he unconsciously performed the act required. My experiments with this subject show that I can in him produce complete analgesia and anaesthesia and induce in him the deepest stages of somnambulism.

Experiments with Subject 2.

W. D., a porter, aged 26 years. Numerous attempts to hypnotise him have been unsuccessful. He gazes unflinchingly and for a long time at the disc without feeling the least drowsiness. By placing my hand on his forehead some stiffness of the eyelids results and on one or two occasions there was distinct difficulty when he opened them against my command. Urgent suggestion makes him somewhat sleepy but on no occasion has any rigidity or stiffness of muscles been produced and he remains, to all intents and purposes, thoroughly awake. He has seen H. S. hypnotised and is a very willing subject but does not seem able to concentrate his thoughts on the point at issue. And although he is most anxious that the looked-for result should occur yet I very much doubt whether even the earliest stage of hypnosis has been induced. Most authors say that drowsiness alone

whole of the preceding experiments he was quite unconscious and had no subsequent recollection of anything that had occurred whilst he was in the hypnotic state, this condition having lasted about 40 minutes.

At the conclusion I was asked again to hypnotise him, which was readily done. It was then suggested by the chairman that as this man had allowed himself to be thus made use of without hope or idea of reward he should be made to take a collection for himself whilst in a condition of hypnosis. This was done and I told him that he had been given a number of counters which he was to put in his pocket. When awakened he had no idea of what had happened and later had an agreeable surprise when told to examine his pockets. The meeting terminated with a discussion of the phenomena observed.

THE ACID EXTRACT OF THE DUODENAL MUCOUS MEMBRANE AS A REMEDY IN DIABETES MELLITUS.

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Dr. R. T. Williamson,¹ writing in 1898, closes his very full account of the treatment of diabetes with the following words: "It will be evident that what is required to enable us to combat the disease successfully is either: (1) some new form of carbohydrate which diabetic patients can assimilate and which can take the place of sugar and starch in the diet; or (2) some internal remedy which will prevent the accumulation of sugar in the blood, a remedy which will enable the system to dispose of the carbohydrates in the normal manner." So far as the first of these requirements is concerned we are in the same position to-day but I am not so sure as to the second.

There is no reasonable doubt that the pancreas plays an important, if not indispensable, part in the assimilation of the carbohydrates. In many cases of diabetes anatomical changes have been found in the pancreas; in others none have been found. However, as was natural, attempts have been made to treat cases with pancreatic extracts. I think I may safely say that they have proved uniformly unsuccessful. We must not forget that the action of a gland may be limited to its living state and that some of the specific changes it then produces cannot be brought about by an extract of the organ. This may be illustrated by the case of the kidney—the living organ can produce the synthesis of hippuric acid from glycocoll and benzoic acid; the dead organ or a renal extract fails completely to do so. We may have in the case of the pancreas a similar position, the living organ has a powerful share in the assimilation of carbohydrates. It has been shown that extracts of pancreas have no glycolytic action. I suggest that it is a function of the living organ, in which case the negative results of pancreatic feeding are explicable.

Now, whilst talking over the subject of diabetes in January, 1905, Professor B. Moore suggested to me that the acid extract of the duodenal mucous membrane might prove of service. I accepted the suggestion readily, for it seemed to me that it afforded some hope of stimulating the living organ. The basis of the suggestion was, of course, the well-known work of Bayliss and Starling who have shown that the contact of hydrochloric acid with the epithelial cells of the duodenum causes in them, the production of a body which is absorbed by the blood stream and carried to the pancreas, there to act as a specific stimulus to secretion. We do not know whether the internal secretion of the pancreas is derived from special cells or from the ordinary cells of the organ. We do know that an active pancreas pours a larger amount of lymph into the efferent vessels and this may include an increase in the internal secretion. Without entering into the battlefield of warring opinions as to the exact methods of their action it may be said that the duodenal mucous membrane, the pancreas, the liver, and the muscles are all concerned in carbohydrate assimilation. It is

difficult in any given case of diabetes to determine which of them may be at fault; moreover they are all under the control of the nervous system, either directly or through the intervention of the blood-vessels. It is impossible therefore to say in any particular case whether the acid extract will prove useful or whether combinations of extracts of these organs may be necessary.

Gilbert and Carnot² have had some results in man with liver extract and O. Cohnheim³ *in vitro* has found marked glycolytic action exerted by a mixture of pancreas and muscle extracts. This, however, has been denied by Claus and Embden.⁴

I shall not enter into further detail on the scientific side of the question, nor do I propose to give full details of my cases. The whole matter is distinctly tentative and I bring it forward in order that a larger number of cases may be tried.

CASE 1.—My first case was that of a man, aged 25 years, who was admitted into my men's ward at the Royal Infirmary on Sept. 14th, 1904. It was a typical case; there were wasting, dry skin, polyuria, excessive thirst, and weakness. The urine contained on an average 3000 grains of sugar and was in quantity from 110 to 120 ounces; it contained acetone and diacetic acid. Codeia was given with no effect. On Nov. 23rd antipyrin was given and in January, 1905, the sugar had fallen to 1000 grains. In January the acid extract of duodenal mucous membrane was given and by the end of May the urine had become quite free from sugar and the polyuria had ceased. The man's sense of well-being was so great that he stopped coming for his medicine. I may say that he had left the hospital at his own request at the end of January. He remained well until August when wasting again set in and in October I again admitted him to the hospital and he died on Dec. 17th from tuberculous caseous pneumonia.

CASE 2.—Meanwhile I had seen, in consultation with Dr. W. Macfie Campbell and Dr. J. Graham Martin, a boy, aged seven years. He had never been a strong lad and in June, 1905, his mother noticed that he was wasting, was paler, languid, always thirsty, and had a huge appetite. Dr. Martin found the urine to measure 70 ounces and to contain 8.3 per cent. sugar = 2685 grains. On July 5th the patient was dieted and put on antipyrin and the acid extract. With slight fluctuations a steady diminution in the polyuria and the glycosuria followed until on August 30th the report of the urine examination was: "Quantity 1180 cubic centimetres; no sugar." Early in October we began to drop the antipyrin day by day, then the acid extract, until on Dec. 2nd the patient was taking no drugs. He is still sugar-free, has gained weight, and is a better colour. I may say that he is still on a fairly strict diet but we propose at the end of January, if the urine remains sugar-free, to see what his carbohydrate limit is.

CASE 3.—The third case that I wish to mention is under the care of Dr. J. Matthews of Blundellsands and as the treatment with acid extract was adopted from hearing of my cases he has given me permission to report it. The patient, a girl, aged nine years, was found to have glycosuria in November, 1905. The urine was of specific gravity 1040 and the sugar was 10 per cent. At first a modified diet with antipyrin and alkalies was given and the sugar fell to 3 per cent. and was steady at this level for three examinations (six days). Acid extract was then given and on Dec. 23rd the urine had become sugar-free. I believe this patient relapsed without any very definite reason but the sugar is again lessening in amount.

I have tried the acid extract in two other cases with a negative result but the duration of treatment was so short that they afford no evidence one way or the other. Fuller details of the cases will be found in the forthcoming number of the new *Bio-Chemical Journal*, edited by Professor B. Moore and Mr. E. Whitley, but I must acknowledge my indebtedness to Mr. Edie for the trouble he has taken in the regular examination of the urine in Cases 2 and 3 and to Dr. Campbell, Dr. Martin, and Dr. Matthews for their kindness in allowing me to report their cases. I do not wish to draw any far-reaching conclusions from these cases but I certainly think that they deserve attention and afford ground for a more extended trial of the extract.

Liverpool.

² Gilbert and Carnot: *L'Ophothérapie*.

³ O. Cohnheim: *Zeitschrift für Physiologische Chemie*, Band xxxix, p. 336.

⁴ Claus and Embden: *Hofmeister's Beiträge*, Band vi., Heft 5.

A NEW AND EASY PROCESS OF TRIPLE STAINING FOR CYTOLOGICAL AND HISTOLOGICAL PURPOSES.

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In the course of an investigation upon the nuclear changes characterising certain new growths I was led into various experimental methods of tissue staining in the hope that I might render my work more easy by devising some simple and rapid way by which a sharp colour differentiation between the various constituents of the nucleus, cytoplasm, and intercellular tissues might be obtained. This object I have attained by a process founded on the "triple stain" of Flemming. An account of it has already appeared in Vol. VI. of the Archives of the Middlesex Hospital and I have since that publication further improved upon it. Flemming's "triple stain" is a method well known to workers in the field of cytology. Its original object was to combine in the tissues the stains saffranin, gentian violet, and orange G. in such a way that the chromatic substance of the nucleus should be stained by the gentian violet, the cytoplasm by saffranin, and the intercellular substances by the orange. This at least appears to have been the aim of its originator, but subsequent workers have not attained this ideal and it has fallen into disrepute amongst certain of them. Thus Bolles-Lee describes it as a "clumsy and uncertain method." It is, however, true that other authorities still warmly commend it, although they do not pretend to realise the ideal of a "triple stain" in the sense of giving three distinct colours. Moreover, even when used as a double stain the method is lengthy and uncertain. By the following method a true triple stain can be attained with ease, rapidity, and certainty.

Technique.—1. Fix small pieces of the tissue in acetic alcohol.¹ (The fixatives of Hermann and Flemming may be used if preferred. The older and inferior fixatives such as alcohol, &c., are useless as regards the fine details for which this process was devised, whilst formalin renders it impossible of performance.) 2. Embed, cut, and mount in the usual manner. 3. Stain for one hour in a saturated watery solution of saffranin. 4. Wash in water. 5. Stain for a quarter of an hour in a saturated watery solution of methyl violet. 6. Wash in water and wipe the slide dry except that part occupied by the section. 7. Have ready in a drop-bottle the following solution: to 20 cubic centimetres of acetone add drop by drop a saturated watery solution of orange G. until the flocculent precipitate which slowly appears on shaking is just dissolved in excess of the watery solution; then filter. 8. Flood the slide with this solution. A cloud of colour immediately comes out which obscures the view of the section. 9. Pour this off on to blotting-paper and flood again with the same solution. The colour cloud being much fainter the section can be watched. 10. When the section has attained a rather faint brownish-pink colour, pour off the orange-acetone solution. 11. Wash in acetone for a few seconds. (This should be contained in a small glass jar. Acetone being very volatile, care should be taken that the section does not dry.) 12. Wash in xylol. 13. Transfer to low-power microscope and see if the proper result has been attained. 14. Wash in two fresh changes of xylol. 15. Mount in xylol-balsam.

Result.—All chromatic elements, nucleoli, and certain nuclei, such as those of polymorphonuclear leucocytes, stain a rich violet, chromosomes standing out with peculiar distinctness. The spindle fibres of nuclear mitosis stain a faint pink. The cytoplasm stains a rose pink. The intercellular tissue stains a pale yellow. These effects are best seen if the slide be examined through a deep blue screen.

Notes.—A. The method appears to depend upon a selective

action of the orange-acetone on the saffranin and methyl violet. It displaces both of them from the tissues but removes the saffranin most rapidly from the chromatic elements, whilst it displaces the methyl violet most rapidly from the cytoplasm. B. The most important factor in the process is the orange-acetone solution. If this is allowed to act too long the whole section is stained a uniform yellow. If it has not acted long enough the section is blotchy from methyl violet remaining in the cytoplasmic structures and has a distinct violet tint. If the colours are discharged too rapidly the orange acetone is too strong and should be diluted with acetone. The reagent deteriorates after a time. C. The duration of the exposures to the saffranin and methyl violet may be varied respectively according to the particular tissue under preparation. The periods I have given represent a fair average. If the saffranin has acted too long relatively to the methyl violet all the latter stain will be displaced, the saffranin alone remaining in the chromatic elements, a want of distinctness in these structures resulting. If the methyl violet has acted too long the saffranin is discharged from the cytoplasm before the methyl violet and the preparation is blotchy and indistinct. A very slight degree of practice is sufficient to overcome these difficulties. D. If on examination with the low-power microscope (see above) it is found that not sufficient colour has been discharged the treatment with orange-acetone should be repeated. If, however, too much colour has been discharged the specimen had better be taken back from xylol, through acetone, to water, and the process begun over again.

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THE IMPORTANCE OF A STRICTLY LIMITED LACTATION.

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FOR everyone through whose hands are constantly passing cases of illness in childhood and infancy the question of infant feeding is a matter of primary importance and, consequently, the condition of health of the mother is a subject of the greatest importance and interest. In the study of this question it seemed to me that some interesting light might be thrown on the very complicated subject of the relationship between mother, fetus, and suckling by observations on the concurrence of pregnancy and menstruation with lactation and as a consequence of the results obtained I am led to advance this plea for a more strict limitation of the length of lactation.

My observations were conducted in the case of 100 mothers from whom there were born 405 children (five cases of twins), and of these 400 deliveries there were 374 from which 378 infants survived at least two months. In 259 of these 374 deliveries (69 per cent.) the children were nursed on the breast, wholly or partially, for at least two months; and, therefore, in 259 cases there was a possibility of pregnancy or menstruation occurring during lactation. Of these cases the average duration of suckling was ten months. In six cases the condition as regards the menses was not ascertained, and of the 253 lactations in which this point was determined, in 153 (60 per cent.) there was complete amenorrhoea and in 100 (40 per cent.) menstruation occurred. Of these 100 occasions in which menstruation occurred during lactation the date of the return of menstruation was:—

During the first two months after birth in 27 cases.			
"	third	month	" 7 "
"	fourth	"	" 4 "
"	fifth	"	" 11 "
"	sixth	"	" 15 "
"	seventh	"	" 9 "
"	eighth	"	" 12 "
"	ninth	"	" 7 "
"	tenth	"	" 1 "
"	eleventh	"	" 5 "
"	twelfth	"	" 1 "
"	thirteenth	"	" 1 "

¹ Pure glacial acetic acid 1 part and absolute alcohol 2 parts. Immerse small pieces of tissue not exceeding a 3 mm. cube from 5 to 15 minutes, according to size. Dehydrate rapidly in several changes of absolute alcohol. It is of great importance that the glacial acetic acid should be pure (99 to 100 per cent., freezing point 15° C.) and that the alcohol should be absolute.

From which it is seen that in more than one-fourth, or 27 per cent., of these cases menstruation returned within two months of delivery, and in 92 per cent. of cases within nine months, figures closely agreeing with those of Mlayer who found that in 685 lactations menstruation returned in 25 per cent. of cases within the first six weeks after delivery.

Of the 253 cases of lactation the position of the children in the family and the condition as to amenorrhœa or menstruation during the lactation, with the average duration of lactation for the children of each position, were as follows (Table I.):—

TABLE I.

Position of child.	Number of cases.	Amenorrhœa.	Menstruation.	Average duration of lactation.
1st	71	40	31 (44%)	9 months.
2nd	54	28	26 (48%)	10 "
3rd	44	26	18 (40%)	10½ "
4th	24	15	9 (38%)	11½ "
5th	22	14	8 (36%)	9½ "
6th	15	11	4 (27%)	9½ "
7th	8	7	1 (13%)	12 "
8th	7	5	2 (29%)	9 "
9th	4	3	1 (25%)	9½ "
10th	1	1	0	12 "
11th	1	1	0	12 "
12th	1	1	0	12 "
13th	—	—	—	—
14th	1	1	0	12 months.

From these figures it would appear that menstruation during lactation is decidedly commoner with the early

children than with the later. This, however, might be due to the fact that the earlier children were longer on the breast, but a glance at the last column of the foregoing table shows that with no child is the average duration of lactation shorter than with the first, and, consequently, that the increased frequency of the return of menstruation during lactation in the earlier lactations is not due to the greater length of the lactation period. As regards the date of the return of menstruation in the cases of the different children in the family, Table II. gives these dates and also the percentage frequency of the return under two months after delivery and at the sixth month:—

TABLE II.

Position of child.	Number of cases.	Return of menstruation.													Under 2 months.	At 6th month.
		Within 2nd month.	3rd month.	4th month.	5th month.	6th month.	7th month.	8th month.	9th month.	10th month.	11th month.	12th month.	13th month.	14th month.		
1st	31	11	4	2	2	1	5*	1	1	1	2	1	—	—	35	65
2nd	26	5	2	1	3	3	2	6	3	—	1	—	—	—	19	53
3rd	18	5	—	1	1	3	1	4	2	—	1	—	—	—	28	56
4th	9	2	—	—	2	3	—	1	—	—	—	—	—	1	22	33
5th	8	3	—	—	2	1	1	—	1	—	—	—	—	—	38	75
6th	4	—	—	—	1	2	—	—	—	—	1	—	—	—	0	75
7th	1	—	—	—	—	1	—	—	—	—	—	—	—	—	0	100
8th	2	—	1	—	—	1	—	—	—	—	—	—	—	—	0	100
9th	1	1	—	—	—	—	—	—	—	—	—	—	—	—	100	100

From the above it is seen that in a considerably greater proportion of cases does menstruation return within 4

TABLE III.—SHOWING THE DURATION OF OVERLAPPING OF PREGNANCY AND LACTATION.

No.	Length of lactation.	Date of conception after delivery.	Duration of overlapping of pregnancy and lactation.	Position in family of fetus conceived.	Presence (+) or absence (—) of menstruation before conception.	Age of mother at date of conception.	Condition of children at date of examination.		Number of children in family.
							Suckling.	Fetus.	
1	11 months.	8 months.	3 months.	Second.	M —	21½ years.	Alive and well.	Alive and well.	4
2	12 "	7 "	5 "	"	M —	29½ "	" "	Died, aged 5 months.	11
3	15 "	10 "	5 "	"	M +	25 "	" "	Phthisical.	8
4	12 "	8 "	4 "	Third.	M +	26½ "	Phthisical.	Delicate.	8
5	12 "	9 "	3 "	"	M +	21½ "	Alive and well.	Stillborn.	3
6	9 "	8 "	1 "	Fourth.	M +	28 "	" "	Miscarriage.	9
7	24 "	18 "	6 "	Third.	M —	30 "	Died, aged 2½ years.	Alive and well.	10
8	24 "	18 "	6 "	Fourth.	M —	32 "	Alive and well.	" "	10
9	11 "	10 "	1 "	Second.	M +	24½ "	" "	" "	3
10	13 "	11 "	2 "	"	M —	20 "	" "	Died, aged 10 months.	4
11	13 "	11 "	2 "	"	M +	23 "	" "	Alive and well.	6
12	11 "	6 "	5 "	"	M —	21 "	" "	" "	9
13	12 "	11 "	1 "	Twins, fourth and fifth.	M +	30½ "	" "	Premature twins; died.	9
14	12 "	8 "	4 "	Third.	M —	24 "	" "	Alive and well.	8
15	15 "	10 "	5 "	Second.	M —	28½ "	" "	" "	3
16	7 "	6 "	1 "	"	M +	23 "	" "	" "	8
17	7 "	6 "	1 "	Third.	M +	24½ "	" "	" "	8
18	10 "	9 "	1 "	"	M —	22½ "	" "	Died, aged 6 months.	14
19	18 "	16 "	2 "	Fourth.	M +	25 "	Delicate.	Miscarriage.	5
20	6 "	4 "	2 "	Second.	M +	20 "	Alive and well.	" "	5
21	9 "	8 "	1 "	Twins, fourth and fifth.	M +	21½ "	" "	Twins—one died at birth; the other very delicate.	5
22	15 "	6 "	9 "	Third.	M +	23½ "	Delicate.	Delicate.	9
23	9 "	5 "	4 "	Second.	M +	20 "	" "	Stillborn.	5
24	13 "	11 "	2 "	Fourth.	M +	35 "	" "	Delicate.	6
25	13 "	10 "	3 "	"	M —	32 "	Alive and well.	" "	6
26	13 "	10 "	3 "	"	M —	23 "	" "	Alive and well.	12
27	10 "	9 "	1 "	Second.	M —	23 "	" "	" "	8
28	14 "	12 "	2 "	Third.	M +	25½ "	" "	" "	10
29	11 "	7 "	2 "	Second.	M —	23 "	Died, aged 18 months.	" "	10
30	11 "	8 "	3 "	"	M +	24 "	Alive and well.	Delicate.	5

months in the later children than in the earlier children, and as the average lactation period of the later children was as long as that of the earlier children, it appears that when menstruation occurs in later lactations it occurs early or not at all. Of the 100 mothers examined, 87 suckled a child for two months on at least one occasion, and of these 87 who suckled once or oftener 47 experienced the return of menstruation during lactation; while of the 47, in 26 cases it occurred with every lactation. Menstruation during lactation was thus found to occur in nearly 1 in 2 of the subjects examined and in the great majority of the cases the return of the menses took place within nine months of delivery. That in no single instance was the suckling seriously affected is an important point, and the fact that the return of menstruation is commoner during the earlier than the later lactations would seem to indicate that its return is accelerated in the case of the younger and stronger mothers. This condition, therefore, by no means necessarily serves as a contraindication for the continuation of suckling, and a French author indeed—M. Gillet—goes so far as to recommend as a wet-nurse the woman who menstruates regularly during lactation, as this he considers to be a sign of robust health.

The condition of pregnancy during lactation is, however, a very different matter. Of my 259 cases where this was a possibility it occurred 29 times, and the following table summarises these cases. Here it will be seen that of the 100 mothers in 24 per cent. pregnancy occurred during lactation and in 29 out of 374 conceptions—i.e., 8 per cent. of conceptions, or in 11 per cent. of cases where the infant was reared for at least two months on the breast. Thus in 24 per cent., or nearly 1 in 4 of the mothers, there occurred at some period an overlapping of pregnancy and lactation, and in five cases this occurred twice, and this occurrence took place in 11 per cent. of the lactations.

From Table III. it is seen that the duration of the overlapping of pregnancy and lactation was:—

In 8 cases ... 1 month	In 4 cases ... 5 months
" 7 " ... 2 months	" 2 " ... 6 "
" 4 " ... 3 "	" 1 case ... 9 "
" 3 " ... 4 "	—
Total 29	

and thus that in the majority of cases the period was a comparatively short one. The fetus conceived during lactation was in 14 cases the second member of the family, in eight cases the third, and in seven cases the fourth; and in connexion with later members of a family there was no such occurrence. It therefore certainly appears that this occurrence takes place most frequently in connexion with the earlier children of a family, as might, perhaps, be expected looking to the larger number of early children and the greater frequency of bottle-feeding among the later ones. This would not, however, seem entirely to explain the matter or the entire absence of cases of overlapping among the later children and it may safely be said that this condition of affairs is extremely uncommon. The average duration of lactation of those infants during whose suckling pregnancy occurred was 12 months, while of all the 259 lactations the average duration was ten months. In only two cases did conception occur prior to the sixth month after delivery and the average date of conception was nine months after delivery, while the importance of the lengthened average period of lactation is observed from the fact that no fewer than 12 cases occurred at, or after, the tenth month. These figures largely bear out the statement of McCann that "the greater number of pregnancies during lactation commence after the eighth month."

In 17 cases (59 per cent.) menstruation occurred prior to conception and in 12 cases (41 per cent.) there was no previous menstruation. Remfry, in the course of 900 lactations, found amenorrhœa in 503, or 57 per cent., and menstruation occurred in 338, or 43 per cent., and these figures correspond very closely with my own, which were 60 per cent. with amenorrhœa and 40 per cent. with menstruation. Of the 503 cases with amenorrhœa he found that pregnancy occurred 29 times (6 per cent. of cases) during lactation, while of the 338 cases with menstruation pregnancy occurred in 226 (60 per cent.) during lactation, and he therefore concludes that where menstruation returns during lactation the chances of pregnancy occurring are ten times greater than where there is amenorrhœa. While in my cases it was also found that pregnancy was more common

after the return of menstruation the same marked disproportion between the two classes of cases was not obtained, and thus while in 153 lactations associated with amenorrhœa pregnancy occurred in 12 cases, or 8 per cent., in 100 cases associated with menstruation pregnancy occurred in 17 cases, or 17 per cent., pregnancy consequently occurring rather more than twice as frequently after the return of menstruation as where there was amenorrhœa.

As regards the condition of the children, those in fairly good health have been described as alive and well, while the weakly children have been described as delicate, the sucklings naturally being of greater age than the fetuses and therefore their lives having been exposed to greater dangers. Notwithstanding this it is found that of the 29 sucklings 22 (76 per cent.) were alive and well at the date of examination, while of the 31 fetuses 13 (42 per cent.) only were alive and well at this date. These figures appear to me to be somewhat striking. The works of Prochownick and Noel Paton, in human subjects and guinea-pigs respectively, have conclusively shown the remarkable effect of variations in maternal diet on the embryos, and one might, *a priori*, expect to find the infant of a poor woman, not too fully nourished and for some period, at least, of her pregnancy engaged in the function of lactation, would start life severely handicapped. That this is so my figures show.

Jacobi, many years ago, stated that "lactation and pregnancy are incompatible," but this opinion of the condition would appear to have been anything but universally accepted and in support of the contrary opinion Paquy reports 29 cases of pregnancy occurring during lactation in none of which was any evil effect whatever noticed, and he refers to the well-known condition of affairs among domestic animals, an analogy which appears to me in many respects unsound. That the condition is by no means markedly uncommon has already been pointed out by Robertson and Church and the cause of this is undoubtedly to be found in the widespread belief among the working classes that so long as lactation is continued pregnancy will be avoided—a belief which leads inevitably to the undue protraction of breast-feeding. In such cases the importance of the condition is but ill-recognised from the fact that the suckling probably continues well and thriving, while irrevocable injury is being done to the unseen fetus and consequently the greater need there is of emphasising the dangers of the position.

That the constant reiteration of the command for maternal nursing is as imperative to-day as it ever was goes without saying, but it appears to me indubitable that along with this is the very important obligation of the demand for a strictly limited lactation. My own figures are small in number but very largely agree with, and corroborate, those of former authors, and judging by them I advance this opinion on the following grounds: 1. The concurrence of pregnancy with lactation is comparatively common. 2. Conception is rare within the first six months of lactation and uncommon before the eighth month. 3. Where pregnancy and lactation overlap the fetus is likely to suffer. That every case must be judged on its own merits is a truism, but given fairly average conditions, a strong healthy suckling, and the prospect of intelligent hand feeding the above facts point very strongly to the advantages to be derived from weaning early in the eighth month.

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TRADE ADVERTISEMENTS AND "THE LANCET."

The several correspondents who have sent to us a post-card issued by Messrs. Wright, Layman, and Umney containing an advertisement of Wright's Coal-tar Soap, with a reduced fac-simile of the heading of THE LANCET, will kindly note that this unauthorised and unjustifiable use of our title has been dealt with, and the further issue of the offending card has been stopped. In justice to Messrs. Wright, Layman, and Umney, it should be stated that the card was a creation of their advertising agents who have apologised for the offence and have delivered up to us the stock of the fac-simile headings.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CONGENITAL RIGHT INGUINAL HERNIA CONTAINING A MECKEL'S DIVERTICULUM ADHERENT TO THE APEX OF THE SAC.

By C. B. HOWSE, F.R.C.S. ENG.

A MALE, aged 18 years, was admitted to York County Hospital on Dec. 12th, 1905, for a radical cure of a right inguinal hernia. The hernia had been present from birth. It extended into the scrotum when the patient stood up and formed a swelling of about half the size of the adult fist. On putting the patient on his back the whole swelling was apparently easily reducible with characteristic gurgling. On closer examination, however, a peculiar indistinct mass was felt in the line of the inguinal canal, which gurgled distinctly on rolling it between the thumb and index finger; it had no impulse whatever on coughing and could not be reduced. Mr. F. Shann, under whose care the patient was, kindly gave me permission to operate, and on cutting down and opening the sac I found gut which was bound down by many adhesions to the apex of the sac. The piece of gut was adherent by its blunt apex only. Seeing that there was no mesentery I thought at first it was an infantile cæcum, but on dividing the above-mentioned adhesions and pulling down a couple of feet of gut I found it was a Meckel's diverticulum about two and a half inches long and of about the same diameter as the gut it sprang from. How far along the ileum it arose was not seen as the cæcum was not brought into the wound. A few silk sutures were inserted to cover the raw end of the diverticulum with a peritoneal covering. During the operation distinct peristaltic movements were seen in the diverticulum. The remainder of the operation consisted of Bassini's method of radical cure. The wound healed by first intention and the patient was up on Jan. 5th, 1906.

Meckel's diverticulum occurring, I believe, in only about 2 per cent. of subjects, its presence in a hernial sac must be very rare. I can find no record of its occurrence in this situation and therefore I think the case worthy of publication.

Chiswick, W.

A CASE OF LUMBAR PUNCTURE IN OBSTRUCTED LABOUR.

By FRANCIS FREDERICK JONES, M.R.C.S. ENG.,
L.R.O.P. LOND.

ON Dec. 10th, 1905, I attended a woman in labour with a seven months' fetus. The breech presented and the head was of enormous size. Being convinced that the child was dead I punctured the spinal membranes in the lumbar region with a scalpel. Some cerebro-spinal fluid at once escaped, but the head did not diminish much in size, so I went home to get a perforator. On my return, however, I found that the head was born in consequence of the fluid draining away during my absence. A trocar and cannula would probably have been more suitable than a scalpel for making the puncture.

Twerton-on-Avon, Bath.

CENSURE OF A MIDWIFE—At an inquest on the body of an infant, held at Buckland, Devon, on Jan. 16th, the medical evidence showed that the child was stillborn but that it would probably have lived if a competent person had attended at the birth. The mother had been under the care of a midwife who stated that she had acted as such for 16 years but had no certificate and intended to give up her work. The coroner said that upon her undertaking to do so further proceedings would probably be taken. The jury returned a verdict that the child was stillborn through her attention at birth.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Three Cases of Myoclonus.—"Interrupted Circulation" as a Therapeutic Agent.

A MEETING of this society was held on Jan. 23rd, Sir DYCE DUCKWORTH being in the chair.

Dr. FREDERICK TAYLOR read a paper on Three Cases of Myoclonus. He said that the first patient was a labouring man whom he had seen for the first time 30 years previously. The condition had not materially altered in the last six years. The head was in constant movement in consequence of clonic contractions of the muscles of the neck, and the movements were partly backward jerks and partly lateral movements of a quiet shaking character. Thus the head was moved right, left, and right again, then a pause, then the movement was repeated. The movements were worse when he was standing than when lying down, and they were increased by efforts to follow objects with his eyes. As he stood he swayed a little, both with eyes open and shut. When he walked the gait was ataxic. The ataxia varied and he was often more steady when walking alone than when helped. The ataxia appeared to be due to sudden rising on one or other foot and was less a cerebellar reel than a forward and backward "pitch." Lying in bed he could move the legs more steadily with only a little swaying when they were lifted high. There was a constantly repeated contraction of the lumbar and flank muscles, chiefly of the quadratus lumborum, but also of the lumbar portions of the erector spinæ, latissimus dorsi, and abdominal muscles. These clonic contractions, repeated at the rate of about 100 in the minute, were sufficiently powerful to shake the bed; they no doubt accounted for the slight swing of the lifted legs and largely, if not entirely, for the ataxia of his gait. There were no similar movements in the thighs, legs, buttocks, or in the upper part of the trunk or arms. The muscles were normal in bulk and electrical reactions and the sensory functions were normal. There was no nystagmus. The patient never walked properly, but the movement of his head began when he was aged 21 years. He had never had vomiting or convulsions, but recently he had complained of headache and occasional vomiting. He was in Guy's Hospital for several months in 1903 and was treated with potassium bromide and electricity but without any result. The case appeared to Dr. Taylor to be a form of the condition described in 1881 by Friedreich as paramyoclonus multiplex and more recently by others as myoclonus. The constant condition was the clonic contractions taking place in the lumbar and cervical muscles, and the ataxia, for which the lumbar contractions were responsible. The second case came under Dr. Taylor's notice in October, 1879. The patient was aged 19 years, and four years previously he had suffered from cramps in the right hand which were thought to be writer's spasm. The affection then spread to the muscles of the neck and when Dr. Taylor saw him there was a close resemblance to a case of spasmodic wryneck, with unusual extension to the arm and greater action in the posterior cervical muscles than in the sterno-mastoids. Seven months later he began to have clonic contractions of the muscles of the left loin, chiefly the quadratus lumborum. In 1882 he was still suffering from spasmodic contractions of the sterno-mastoid, posterior cervical muscles, and left flank muscles. The latter constantly drew his left shoulder down to his left ilium and bent him bow-like, a sort of pleurosthotonos. Several years afterwards he was in the same condition. The view originally taken of the case was that it was of the nature of wryneck, with an extension to a new region—wryloin. But as long as the intimate pathology of this condition was unknown it could scarcely be excluded from the very wide group of myoclonus. The third case had been seen recently and it was that of a woman suffering from paraplegia, secondary to the formation of a cancer in the breast which was removed in 1901. From her childhood, however, she has been subject to a tremulous condition of the arms which on careful examination proved to be due to constant clonic contractions of the muscles arising from the internal condyle on each side. The

biceps and triceps were quiet, but a slight shock in the arm due to the above-mentioned contractions could be felt. The pathology of cases called myoclonus was at present obscure. The movements present resemblances to those of chorea, electric chorea, spasmodic wryneck, convulsive tic, and certain movements in hysteria. They were spontaneous, intermittent, sudden, or "lightning-like," single or multiple, but in all cases incoordinated contractions of muscles, or large parts of muscles. Considerable variety was possible in the part of the body affected and the extent of the body involved.

Dr. E. FARQUHAR BUZZARD referred to the indefinite idea which was conveyed by the term "myoclonus" which had been applied to most various forms of muscular spasm. He would apply the term to those cases in which the muscular contractions were of "lightning-like" character but he admitted the difficulty of separating such contractions from other forms of muscular spasm. In considering the pathology of the condition, he said that the contractions might be due to impulses from the central nervous system or to the increased excitability of the muscles. He was inclined to think that too much was attributed to the central nervous system and recently it had been shown by physiologists that there were two contractile substances in muscle: (1) a fibrillar substance, and (2) protoplasmic substance. When the protoplasmic substance was in excess then the slow contraction similar to that seen in Thomsen's disease was obtained, whilst in myoclonus he suggested that an increase of the fibrillar substance might be present and lead to an increased excitability and rapid contracting of muscles.

Dr. O. E. BEVER said that he thought that the second case reported belonged rather to the condition known as spasmodic wryneck than to the class myoclonus. He would use the term myoclonus to indicate sudden muscular contraction of single muscles which could not be thrown into action by will. He thought that such muscular contractions must be of spinal, and not of cortical, origin, for movements were represented in the cortex and not single muscles. With regard to the third case reported, he was of opinion that that was a true case of paramyoclonus.

Dr. F. E. BATTEZ said that he was of opinion that the term myoclonus should not be used for all forms of muscular contraction but that the term should be limited to sudden clonic contraction of single muscles or parts of muscles. He thought that the classification suggested by Lundborg was that which was most suitable under the present conditions of knowledge: (1) myoclonus, using the term as a symptom indicating a form of myospasm characterised by spontaneous and isolated contraction of individual muscles; (2) myoclonus multiplex; and (3) myoclonus epilepsy. In reply to Sir Dyce Duckworth, he said that he would place Dr. Taylor's first case under heading (1) and regard the myoclonus as a symptom occurring in association with a case of spasmodic tic.

Dr. TAYLOR, in reply, said that he fully realised the difficulty of classification and he had regarded his second case as one of spasmodic wryneck until the likeness to his first case seemed to justify it being classed as myoclonus.

Dr. W. EWART then read a paper entitled "Interrupted Circulation" as a Therapeutic Agent" and showed illustrative cases of rheumatoid arthritis. The paper is published in this issue of THE LANCET (p 213).

MEDICAL SOCIETY OF LONDON.

Uncontrollable Vomiting in Pregnancy.—Dilatation of the Cervix Uteri with Bossi's Dilator.

A MEETING of this society was held on Jan. 22nd, Sir LAUDER BRUNTON, the President, being in the chair.

Dr. G. H. A. COMYNS BERKELEY read a paper on Uncontrollable Vomiting in Pregnancy. He commenced by narrating the case of a woman, aged 24 years, who was four and a half months pregnant and in whom it was proposed to induce premature labour on account of uncontrollable vomiting. A few weeks later hæmorrhage set in and abortion took place. At a subsequent pregnancy uncontrollable vomiting again occurred associated with severe pain in the pelvis and lower abdomen, the pulse being unduly rapid (from 110 to 120). Some of the symptoms of intestinal obstruction supervened. The uterus was emptied but the patient died two days later. At the necropsy a Meckel's diverticulum was found which passed through a hole in the mesentery of the small intestine. The Meckel's diverticulum had evidently become

pushed upwards by the enlarging uterus at each of the pregnancies and becoming constricted against the edge of the orifice in the mesentery had given rise to vomiting and, finally, in the last pregnancy had become gangrenous and had resulted in death. Details were then given of 32 other cases in which hyperemesis gravidarum had been diagnosed but in which the vomiting was proved on the death of the patient to be due to some other cause not diagnosed during life. Among these causes were the following: cancer of the pylorus or stomach, tumour of the brain, tuberculous meningitis, epigastric hernia, carcinoma of the liver, latent abscesses in various situations, constriction of the ileum by a band of adhesion, dermoid cyst of the ovary, fixation of the uterus by adhesions, gangrene of the intestine, septic bronchial glands, partially strangulated hernia, ovarian tumour with twisted pedicle, gastric ulcer, malignant disease of the ovary, and old adhesions of the intestines. The symptoms of true hyperemesis gravidarum were next discussed. The vomit occasionally became stercoraceous. The examination of the blood and of the urine might afford a clue to the diagnosis of the cause. The vomiting which was directly due to pregnancy might be neurotic or toxic in origin and the prevailing opinion in the medical profession was that true hyperemesis gravidarum was in most cases toxicæmia and therefore a more exhaustive investigation of the blood and of the urine in such cases might throw considerable light on the subject. The vomiting that was only associated with pregnancy might be reflex or organic in origin. Reflex vomiting was generally connected with some displacement of the uterus or lacerations of the cervix. The organic causes of associated vomiting were very numerous; some were discoverable by careful search but others, like those previously mentioned, were practically undiscoverable during life, but the greatest care should be exercised and the most exhaustive examination should be made. Dr. Berkeley advocated that every endeavour should be made to obtain a post-mortem examination of all cases dying from supposed hyperemesis gravidarum, by which means he thought that the present conception of the disease might be considerably altered. He also suggested that the induction of premature labour in cases of hyperemesis should be carried out much earlier than was usually the custom not only because the chances of recovery would be much greater—since in some of these cases which were left the woman died in spite of the induction and thus the death-rate was abnormally high—but also because, if the vomiting did not cease after the uterus was emptied there would then be time to seek for, and to deal with, some associated cause. In his view the death-rate would be considerably lowered by these means.—Dr. V. BONNEY confirmed the findings at the post-mortem examination on Dr. Berkeley's case. The difficulty of diagnosing such cases must be very great. He referred to a case of hyperemesis gravidarum that he had seen in which nothing could be found at the time. Subsequently there was evidence of there having been an extra-uterine gestation, which resulted in death consequent on its rupture. In another case he had found abscess of the uterine wall.—Dr. G. F. BLACKER referred to the case of a woman, aged 43 years, who was said to be pregnant and who was the subject of uncontrollable vomiting and albuminuria. It was, however, ascertained that she was not pregnant at all; under an anæsthetic a fibroid of the uterus was discovered. He advocated more exhaustive examination of such cases. The toxic cases were most serious; cases of reflex vomiting got well.

Dr. BLACKER read a paper on Dilatation of the Cervix Uteri with Bossi's Dilator. One of the most important questions that the obstetrician had from time to time to answer was what was the best method of rapidly dilating the cervical canal in cases where immediate delivery was indicated in the interests of the mother or of the child. Bossi's method of rapid artificial delivery had now been in use for some 15 years and a sufficient number of cases had been recorded to enable a correct judgment to be formed as to its merits and defects. It was claimed for his method of rapid dilatation of the cervix with a mechanical metal dilator that it was certain and successful even in cases of primiparæ in whom the cervix had undergone no shortening or obliteration and that such dilatation could be carried out with great rapidity. The use of the dilator involved no extra risk of septic infection and the method which Bossi claimed was a physiological one, inasmuch as it excited uterine contractions. The recorded cases showed that it was possible to dilate the cervix when it was still intact by this instrument,

but such a procedure entailed great danger of tearing the tissues of the cervix. The average length of time required in cases in which the canal was intact at the time the operation was begun was 24 minutes, while in cases in which it was partially obliterated at the commencement of the operation it was 16 minutes. These figures showed that this was the most rapid method of completely dilating the cervical canal available, short of making incisions into the tissues or practising vaginal Caesarean section. The after-histories of the recorded cases proved further that there was very little risk of sepsis. The dilatation of the cervix could, however, hardly be called physiological, since the canal was dilated as a whole and there was no obliteration of its cavity. The most serious objection which could be urged against the use of such powerful dilators was the grave risk of tearing the tissues of the cervix as the result of the forcible dilatation. That dangerous tears of the cervix might and did occur could not be denied, but long series of cases had been published both by Bossi and Leopold in which no tears or only slight tears had resulted. Severe tears of the cervix were met with in only 4 per cent. of Leopold's 47 cases and in somewhat less than 3 per cent. of Bossi's last 107 cases. No case had so far been recorded in which the death of the patient could be attributed to the use of the dilator. Dr. Blacker gave the results of ten cases in which the instrument had been used by his colleague, Dr. Herbert R. Spencer, or himself. The conclusions which he (Dr. Blacker) came to were that in Bossi's dilator they had a means of dilating rapidly the cervix which was applicable both to cases in which the cervical canal was still intact and to cases in which it was partially dilated. In the former class of cases, however, there was a very great danger of tearing the tissues. This danger existed even in cases where the cervix was already beginning to dilate and depended rather on the degree of softening present than on the amount of dilatation. However, even in the most favourable conditions lacerations might occur and therefore the dilator should only be used in the most urgent indications—that is to say, in cases where grave danger existed to the life of the mother or to that of the child and where rapid emptying of the uterus was likely to lessen such danger. Happily such cases were of very rare occurrence. Bossi's method should not be used for placenta prævia or in the induction of premature labour. Faulty methods were no doubt responsible for some of the unfavourable results but the instrument afforded a good means of rapid and complete dilatation where the cervix was obliterated and the rapid emptying of the uterus was indicated.

LIVERPOOL MEDICAL INSTITUTION.

The Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus.—The Hematology of Pregnancy and the Puerperal State.—The Complications of Pneumonia and their Treatment.

A MEETING of this society was held on Jan. 18th, Mr. FRANK T. PAUL, the President, being in the chair.

Dr. J. HILL ABRAM read a note on the Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus, which will be found on p. 220 of our present issue.—Professor W. CARTER considered Dr. Abram's communication as most hopeful and full of encouraging possibilities in the treatment of a disease which, when occurring in patients as young as one of his, had always been regarded as fatal. He for one thanked him heartily for having unreservedly placed in their hands his methods.—Professor MOORE, Dr. R. J. M. BUCHANAN, Dr. A. STOKES, Dr. E. T. DAVIES, Dr. J. GRAHAM MARTIN, and Dr. O. T. WILLIAMS also spoke.

Dr. J. O. M. GIVEN read a paper on the Composition of the Blood in Pregnancy and the Puerperal State. It was based on the investigation of 12 cases of labour in which the blood was examined before and after labour and at stated intervals during the lying-in period. A marked leucocytosis of the polymorphonuclear type occurred immediately after labour and rapidly sank to normal by the end of the first week. A progressive increase in the number of the lymphocytes then occurred, until at the end of the second or third week they were more numerous than the polymorphonuclear cells. The influence of premature labour, stillbirth, albuminuria, &c., on the blood count was noted.—The PRESIDENT expressed his regret that time would not permit of any discussion on Dr. Given's valuable and interesting paper.

Dr. NATHAN RAW read a paper on the Complications of Pneumonia which he had met with in an observation of 1832 cases. He referred more especially to empyema, pericarditis, endocarditis, and the acute general infections produced by the pneumococcus, such as septicæmia, meningitis, arthritis, and peritonitis. Dr. Raw briefly referred to the treatment in each condition.—Professor CARTER referred to two conditions in pneumonia not alluded to by Dr. Raw—one at the onset of the disease where the engorgement was sometimes so general as to threaten life. The patient sat up, the right heart was over distended, the pulse was small, the face was pale or livid, and the respiration was laboured. In this condition bleeding was followed by speedy relief. The other was the violent delirium which sometimes followed the crisis; opium, which would possibly have killed the patient at an earlier stage, would now save his life. Thirdly, Professor Carter thought that, considering the intense coagulability of the exudate and the fact that it contained a large amount of calcium salts, preparations of this metal should not be administered at any stage of the disease.—Dr. ABRAM said that in a healthy subject complications were less often seen than in almost any other infective disease. They were mainly due to previous damage—e.g., pneumococcal endocarditis implanted upon old valvular trouble. Many complications, too, were due to secondary infections, as in a congenital heart case under his own care where the infective trouble was proved to be streptococcal in nature. Dr. Abram had observed that the onset of pericarditis was often marked by orthopnoea. He was opposed to the use of the needle without preliminary exposure of the pericardial sac. The great difficulties of diagnosis had been pointed out by Trousseau. Dr. Abram could not agree that jaundice was often seen in right-sided cases; in the early stages jaundice was the result of toxæmia and not serious, and in the later stages it was often the expression of an infective cholangitis and most deadly. He corroborated Professor Carter's remark respecting delirium following the crisis and recommended the use of opium combined with digitalis.—Dr. W. B. WARRINGTON remarked that among the complications seen by him were apical abscess of the lungs, the diagnosis being made by the persistent presence of elastic fibres in the sputum with diplococci and no tubercle bacilli; extensive and confluent hæmorrhages under the skin, the necropsy revealing pneumonia only; gangrene of the lungs; and apparently primary pneumococcal meningitis. Dr. Warrington insisted on the importance of suspecting pro-pericarditis in cases of empyema in children which did not pursue a normal course and alluded to the valuable papers of Dr. J. A. Coats.—Dr. A. G. GULLAN related two cases of pneumonia in which typical relapses occurred after 24 hours of normal temperature. These relapses both lasted about eight days, terminated by crisis, and were accompanied by the physical signs of lobar pneumonia in another part of the lungs. Dr. Gullan also referred to the chronic pneumonia or permanent consolidation of the lobe affected which occasionally followed acute lobar pneumonia, an example of which he had seen in a woman, aged 54 years.—The following members also took part in the discussion: Dr. BUCHANAN, Dr. E. E. GLYNN, Mr. W. STOCKDALE, Dr. E. T. DAVIES, and Dr. J. LLOYD ROBERTS.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Sleeping Sickness in Uganda.—Use of Storaine as a Spinal and Local Anæsthetic.—Relation of Spirochaete Pallida to Syphilis.—Exhibition of Spirochaetes.

A MEETING of this society was held on Jan. 17th, Dr. J. O. AFFLECK, the President, being in the chair. Captain E. D. W. GREIG, I.M.S., read a communication illustrated by numerous lantern slides on Sleeping Sickness in Uganda. He said that since the epidemic broke out fully 100,000 natives had died in Uganda since 1900. The work of investigation was commenced in May, 1903. The disease ran an extremely chronic course, three to four years being usual. The lymphatic glands underwent enlargement and formerly it was a usual practice of the slave dealers to examine the posterior cervical glands of the slaves and to reject any in whom these glands were enlarged. The patient's temperature remained normal for long but when the nervous symptoms developed the temperature during the last six to seven months of the patient's life underwent a daily rise. During

the week immediately preceding death, however, the temperature gradually fell until it became that of the surrounding air. The juice from the enlarged glands showed the presence of the characteristic parasite so that the disease could be diagnosed at a very early stage. This was of great importance as regards the migration of the individual and the risk of spreading the disease to districts which formerly were free from the disease. The axillary and later the inguinal glands underwent enlargement. The nervous symptoms manifested themselves in a peculiar facies, marked tremor of the tongue, ataxic gait, and slowness of speech; tremors of the muscles of the hands were also present. There might be acute mania or nervous exaltation. The patient gradually became more and more emaciated until he was merely skin and bone, completely bedridden, and with numerous bedsores and jigger sores. It was only during the last week of life to which the term "sleeping sickness" might truly be applied. The parasite was not present in the cerebro-spinal fluid at an early period of the disease but during the nervous symptoms it might be obtained from the cerebro-spinal fluid. The presence of the trypanosome was synchronous with the nervous symptoms. As regards the blood, anemia was not marked, there was no great reduction in the number of the red blood corpuscles, and, indeed, their number might even rise above the normal as to 6,000,000. The hæmoglobin might also rise above the normal amount. The mononuclear leucocytes were also increased in number. In the brain the convolutions were flattened and there was an increase in the subarachnoid fluid. Microscopically there was a characteristic perivascular infiltration of lymphocytes and plasma cells (small and large lymphocytes, plasma cells, and granule cells). As a terminal invasion the diplostreptococcus might be found. In the stomach underneath the mucous membrane a number of petechial hæmorrhages might be seen. These, when digested by the gastric juice, gave the appearance of charred patches. The parasite received the name of the trypanosoma Gambiense. In the blood or cerebro-spinal fluid it was actively motile and was about three times as long as a red blood corpuscle. The body of the parasite possessed a large nucleus and a small centrosome. It possessed a large food vacuole and along its dorsal surface a fine fringe ran. At the ends were one or two free flagella. From 50 to 70 per cent. of apparently healthy natives harboured this parasite in their blood. Many of these died after a longer or shorter period, while others had apparently escaped. In the non-sleeping sickness area the parasite had never been found. Experimental work had been done on monkeys, cattle, sheep, dogs, guinea-pigs, &c. Cerebro-spinal fluid was injected into these and for months they might remain without evidence of the disease. In all the monkeys a form of malarial parasite was found in the blood but before inoculation trypanosomes were absent from their blood. The disease remained very closely confined to the margins of the Lake Nyanza and its islands and to the margins of Albert Nyanza. The tsetse-fly (*Glossina palpalis*) was the carrier of the parasite. This fly laid no eggs but a single actively motile larva which three weeks later was hatched out (pupifera). In the stomach of this fly an enormous multiplication of trypanosomes took place. They were seen to be undergoing division into several types, probably sexual forms. This multiplication took place in 10 per cent. of the flies. A longitudinal fission of the parasite was the rule. The distribution of the fly corresponded very exactly with the distribution of sleeping sickness. The tsetse fly was very widely distributed over Africa but it required a shady undergrowth for its development. In the experiments the flies were allowed to feed on the blood of infected men and then on monkeys. The interval between these acts varied from eight to 48 hours, and in all cases the disease was transmitted to the monkeys. On investigation it was found that the flies in the affected belt contained trypanosomes. As regards treatment, arsenic in the form of Fowler's solution given subcutaneously was tried. During its administration the parasites were absent from the blood but they reappeared and multiplied when arsenic was discontinued. It was the wild game which seemed not to suffer from the disease but which harboured the parasite, and so tame domestic animals became infected. Where these wild animals existed no tame animals could exist. These wild animals, as also some of the natives, appeared to be immune to the disease. Captain Grig received a cordial vote of thanks for his interesting communication.

Mr. G. L. CHIENE read a communication on the Use of Stovaine as a Spinal and Local Anæsthetic. He said that the use of a general anæsthetic was always a source of possible danger to the patient and now when the dangers due to the actual operative procedure had been reduced to a minimum the anæsthetic might be regarded as the most dangerous factor in many operations. Bier first attempted the production of anæsthesia by spinal injection. Cocaine was used but as the after results were often of a most unpleasant or even dangerous nature the method for a time fell into disuse. In February, 1904, Fournier, a French chemist, first brought before the profession the hydrochlorate of amyleine which he named stovaine. This product when injected into man slowed the pulse and caused contraction of the pupil. Pallor was not induced but often flushing supervened. Dyspnoea, oppression, uneasiness, or excitement was absent and there was no tendency to syncope. It was certainly much less toxic than cocaine and so could be given in larger doses if required. As after-result there was usually a slight rise of temperature which might last for some days. There was little tendency to sickness or vomiting, while headache and spinal neuralgia were rarely present. The general condition was good and the patient could enjoy an ordinary meal. Reclus in July, 1904, gave the results of nine months' experience with stovaine as a local anæsthetic. He employed it in doses twice the strength of cocaine. Chaput maintained that many laparotomies could be performed under spinal anæsthesia with stovaine. In 100 cases 45 operations were performed on the legs, 26 on the perineum, and 29 on the abdomen (hernias, hysterectomies, appendectomies, and ovariectomies). He stated that it was very useful in fractures and dislocations of the lower extremities. The height to which the anæsthesia rose varied greatly with the dose and his failures occurred only when small doses had been given. In his experience the after-results of stovaine were much less severe than those of cocaine. The dose injected varied from four to eight centigrammes and he did not care to employ it in patients over 65 years of age. Mr. Chiene had employed this drug on various occasions since October, 1904, combined with hemisine. In his experience a larger dose was required to produce spinal anæsthesia than that recommended by foreign authorities. He used Tuffier's solution, 10 per cent. of stovaine in sodium chloride solution. Sterilised solutions of the drug were supplied in ampoules. After injection into the spinal canal a sensation of pins and needles was felt in the legs and in about seven minutes the patient was unable to lift the limbs. At this time sensation to pain was lost though that to touch remained. Anæsthesia commenced in the perineal region, then affected the toes and feet, and passed gradually up the limb. It passed off in the reverse order. The operations which he had performed under spinal anæsthesia induced by stovaine included inguinal hernias, transplantation of tendons, removal of tuberculous glands in the groin, operation for severe traumatic flat-foot, hæmorrhoids, varicose veins of both legs, &c. Mr. Chiene was quite satisfied that with more experience both in technique and in the dosage of the drug failures would be exceptional. Lumbar puncture was now a routine method for diagnostic purposes in medicine and accidents were rarely heard of. It was too soon to compare the risks with those of general anæsthetics but it must be allowed that this method might be preferable in many cases. It was stated by some authors that gangrene of the skin occurred at the point of injection, but in Mr. Chiene's experience with the combination of drugs already mentioned he had not had a single case of gangrene of the cutaneous tissues.—The communication was discussed by Dr. T. D. LUKE, Mr. F. M. CATRO, and Mr. J. W. STRUTHERS.

Dr. THEODORE SHENNAN read a paper on the Relation of Spirochæta (Spirochaeta) Pallida to Syphilis.

The following specimens were exhibited:—

Dr. JAMES CAMERON: Strangulated Testicle from a case of Strangulated Hernia in an infant aged six weeks. Operation was followed by recovery.

Dr. H. DOUGLAS WILSON (Harrogate): Radiograms of the Hands from a case of Tophaceous Gout.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 19th. Dr. J. F. W. Tatham, the President, being in the chair.—Mr. W. Hunting, F.R.C.V.S., read a paper on Glaners in Horse and

Man. Though the disease had been scheduled since 1869 there were no very trustworthy statistics before 1881, since which date 44,943 horses had been returned as dying from glanders, giving an average of 2000, of the probable value of £40,000 or £50,000, per annum. Yet it would not be difficult to stamp it out, for 70 per cent. of the cases occurred in London and 90 per cent. in the home counties, the only other centre being Glasgow, and it was not one that spread with any rapidity; but the reluctance of the Treasury to give the money for compensation had hitherto prevented the application of the provisions of the Diseases of Animals Act, the Board of Agriculture urging the plea for inaction that the loss of human life through it was insignificant, not more than two, and once only six deaths appearing in the Registrar-General's annual returns. There was, however, strong ground for believing that the true mortality was very much greater, probably nearer 100, the vast majority being erroneously reported as rheumatic fever, cellulitis, pyæmia, &c. Inoculation and ingestion were the means by which the disease was communicated, ingestion with water and fodder being by far the more frequent. The incubation period was very variable, from two weeks to two months, though the animals might appear in perfect health for a year or even longer. When complicated with pneumonia or pleurisy it might be fatal in a few days or after apparent recovery a relapse might occur. The typical clinical symptoms in the horse were enlargement of the submaxillary glands, with nasal discharge and ulceration of the mucous membranes of the trachea, larynx, and nares, swelling of the lymphatic glands and vessels with small tumours under the skin, "farcy buds," and swelling of one or more of the legs. The only constant lesions found post mortem were nodules in the lungs but the swelling of the bronchial glands always observed in tuberculosis was rare. In 1000 post-mortem examinations made by the veterinary inspectors of the London County Council 482 showed lesions in the lungs only, the nasal mucous membrane was ulcerated in 378, that of the larynx in 179, and of the trachea in 201, the lungs being also implicated in every case. So long as unbroken nodules in the lungs alone were present the disease did not appear to be communicated to other and healthy animals, but such horses might at any moment develop ulceration or the glands might burst and the animal become highly infective. The discovery of mallein in 1890 by a Russian veterinary surgeon furnished an almost infallible means of diagnosing the existence of the disease in the latent stages; like tuberculin, mallein was an extract of the bacilli of the disease, the injection of which into a healthy animal gave rise to no symptoms, but when glanders was present there was not only a characteristic febrile disturbance but a swelling at the site of the injection, this double reaction making the test more decisive than that of tuberculin, but the intensity of the reaction bore no relation to the extent or the duration of the disease, simply disclosing its presence. The existing regulations were wholly inadequate, the enjoined notification, diagnosis by a veterinary inspector, slaughter and compensation to one-fourth of the value of the animal, but there was no provision for the isolation of "contacts" and the disease might go on spreading until the owner sold off his stock to form foci elsewhere in perhaps a score of stables in place of the one originally invaded. Without mallein diagnosis was impossible in the early stages and in the later, when it was obvious, the owner might, in consideration of the meagre compensation, prefer to conceal the fact and get the utmost possible work out of the horse until it was about to die and no longer of use. Some cab-owners habitually and knowingly bought glandered horses, deferring notification so long as possible or selling their whole stock if threatened by a raid from the police or inspectors. As to the prevalence of glanders in man, the Registrar-General's returns gave no notion of the real number of cases; they were never reported by private practitioners and those correctly diagnosed in hospitals had always been admitted under false descriptions—rheumatic fever, typhoid fever, pneumonia, septicæmia and pyæmia, cellulitis, even confluent small-pox, influenza, and "blood poisoning"; in fact, the clinical symptoms in man were far less definite than those in the horse, and it was rarely that a diagnosis could be made with certainty save after a bacteriological examination of the fluid from the cutaneous nodules or of the subcutaneous infiltration of the "cellulitis." Mr. Hunting then gave notes of 11 such cases

admitted under various names into hospitals and a description of the necropsy of one by Dr. Charles Creighton. The mode of infection in man was commonly supposed to be inoculation, but this he believed to be far less frequent than ingestion through "eating with unwashed hands" after handling infected horses. Local manifestations which would indicate the point of inoculation were very rare. Nodules in the lungs were found post mortem, but an absolute diagnosis was even then seldom possible except bacteriologically, though glanders should be suspected in all cases of "cellulitis" or those simulating rheumatic fever, erysipelas, &c., in horse-keepers, cabmen, and others employed in stable-yards.—A letter was read from Dr. E. W. Goodall in reference to the two cases admitted to the Eastern Hospital as typhoid fever. In the first case the presence of intra-muscular abscesses, pathognomonic of glanders but never occurring in typhoid fever, led him to an immediate diagnosis, but he should not have suspected the nature of the second case if it had not been for the man's occupation.—Sir John McFadyen, while agreeing in every essential matter with Mr. Hunting, considered his statements as to the non-infectivity of the early stage as rather too strong, for since the extension to the trachea was due to the escape of bacilli from the pulmonary nodules they might easily at this stage be carried a little farther and render the saliva and nasal mucus infective or escape in coughing.—Dr. H. Armstrong deprecated compensation as tending to encourage the trade in glandered horses and to defeat its ostensible purpose.—Dr. W. Bulloch had seen seven cases at the London Hospital. In the 15 years before the opening of the bacteriological laboratory in 1900 they had no record of a single case, but so soon as bacteriological examinations were systematically carried out they had six cases in two years. Few medical men had ever seen a case, so that it was not surprising that they should fail to recognise one when they met it, though the occupation of the majority of the patients ought to suggest the nature of the disease. One case sent in by the medical officer of health of Shoreditch had been diagnosed by successive practitioners as acute rheumatism, pneumonia, acute rheumatism again, and, lastly, confluent small-pox when the cutaneous nodules began to break up, though they contained not pus but a yellow glairy fluid. Mallein could not be recommended with the human being as, apart from possible danger, it failed to give the local swelling which constituted its chief diagnostic value in the horse.—Mr. F. T. G. Hobday, F.R.C.V.S., remarked on the small number of cases among men employed in cab-yards which were hotbeds of the disease. In one yard 90 horses had been slaughtered in 18 months and in another 15 out of 16 reacted. Inspectors had no power to touch animals that did not show clinical signs; they ought to have power to use the mallein test on all "contacts" and to isolate if they did not slaughter them. Frequently when a horse had been condemned the owner sold off the rest, many, no doubt, already diseased; others regularly kept glandered horses for night work until they broke down. He considered the fee of £2 for notification was too liberal and the quarter value in compensation was insufficient, tending to encourage the delay of notifying till the animal had no more value.—Dr. M. Richards had seen five cases of glanders in man, three of them quite recently in Croydon. In two of these the source of infection could not be traced.—Dr. J. McIntosh McCall mentioned the case of a stable in Glasgow where among over 100 horses only four did not react and two-thirds had no clinical symptoms, appearing in perfect health.—Dr. E. F. Willoughby referred to a case recently quoted in *Public Health* of a veterinary surgeon at Bucharest who contracted glanders through wounding his hand in a post-mortem examination. The initial local lesion was well marked and he died with intense pneumonic and pyæmic symptoms and abscesses in the muscles and all the viscera, cutaneous abscesses, and bullæ.—Mr. Hunting, in reply, mentioned a case of special interest which, taken up by Dr. T. Orme Dudfield in the press, led to the issue of the existing regulations. A girl with a young child in her arms was sitting at the door while their father was giving some medicine to a horse. The animal coughed and bespattered them with mucus and both the girls died shortly afterwards from glanders. Yet he had known of but two horse knackers in London contracting the disease though he had seen more than one cut his hands badly. But the discoverer of mallein and at least half a dozen engaged in its preparation had succumbed to the disease. The descriptions given

in text-books of glanders in man were in very few instances realised in actual practice, intra-muscular abscesses being the only constant and pathognomonic symptom.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 12th, Mr. E. Ward being in the chair. The following cases, pathological specimens, &c., were shown. Professor A. S. F. Grünbaum: (1) An Intestinal Worm *in situ* (microscope); and (2) *Spirochæta Pallida* (syphilis).—Mr. W. Thompson: (1) Fibroid which prevented reduction of strangulated umbilical hernia; and (2) large Fibroid (35 pounds).—Mr. E. Solly: A large Adrenal Tumour removed by anterior incision (microscopic section).—Dr. F. S. Mackenzie: (1) Strangulated Obturator Hernia; and (2) a specimen of a Cloacal Opening in a child. —Mr. Michael A. Teale: A case of (1) Primary Melanotic Sarcoma of Caruncle of the Left Eye (slide).—Mr. H. Littlewood: (1) Extensive Growth from the Skin of the Face (patient); (2) Perforated Gastric Ulcer treated by excision and without drainage (patient and specimen); and (3) some Ovarian and Uterine Tumours. —Dr. A. G. Barrs: Pseudo Tabes and Facial Palsy following gonorrhœa. —Dr. E. F. Truvelyan: (1) A case of Wasting of the Leg of four years' duration; and (2) a case of Aphasia eight months after the onset of right hemiplegia. —Dr. A. L. Whitehead: Specimens from a series of cases of Sub-mucous Resection of the Nasal Septum. —Dr. J. B. Heller: (1) Uterus with Myoma removed by vaginal hysterectomy; and (2) Uterus with Placenta *in situ* from a patient who died from hæmorrhage before labour. —Dr. W. H. M. Telling: (1) A specimen of Tricuspid Stenosis; (2) Chronic Nephritis with Extreme Atrophy of the Abdominal Vessels in a woman, aged 25 years; and (3) with Mr. Littlewood: Viscera from a case of Melanotic Sarcoma. —Dr. T. W. Griffith: (1) A case of Charcot's Disease of the Knee-joint; (2) a case of combined Palsy of the Hypoglossal and Sixth Nerves; and (3) a specimen of Oblique Fracture from a rickety subject (dissecting room). —Mr. G. Constable Hayes: A case of Syphilitic Ulceration of the Nose simulating lupus. —Dr. Griffith read a paper based on a series of specimens illustrative of Abnormalities of the Alimentary Canal. In connexion with the closure of the vitelline duct, a passing reference was made to the comparatively common diverticulum of Meckel with its various sources of danger and the much rarer narrowing or complete interruption of the gut which might take place at this situation was discussed, with special reference to the views of Sutton and Shattock. The aberrant conditions arising in connexion with those normal diverticula, which lead to the formation of the liver and of the respiratory tract, were then discussed under the headings of abnormal diverticula and of stenoses and obliterations. An analogy was drawn between the diverticulum of the duodenum, which was sometimes found just above the crifice of the common bile-duct, and the dimple of peritoneum, sometimes forming a tube of considerable length, which may be found alongside of the obturator artery at the upper part of the thyroid foramen, or the similar depression which so often exists alongside of the external iliac vessels as they pass under Ponsart's ligament, and which may become enlarged to form the sac of a femoral hernia. The former was due to the normal outgrowth which results in the formation of the ampulla of Vater and of the bile and pancreatic ducts, carrying alongside of it a pouch of duodenum, while the latter were caused by the parietal peritoneum being drawn down by the lengthening obturator and femoral vessels respectively. The diverticula of the œsophagus, due to corresponding causes, were described as being situated not close to the permanent opening into the respiratory tract—not close, that is to say, to the superior aperture of the larynx, but much farther down, and the connexion of this with the manner of development of the trachea was pointed out, as was also the difficulty of discriminating between these true diverticula and those commoner ones which were caused by the traction of tuberculous glands. Of complete interruption of the gut in the neighbourhood of the orifice of the common bile duct a good specimen was shown from the body of a child who had lived only a few days. The two blind ends of the duodenum were found close together and the bile duct opened into the beginning of the distal segment. In this case there was a large meningocœle with other abnormalities of the brain; the whole of the large as well as the small intestine retained its primitive peritoneal relations. The condition was suspected

before the body was opened at the necropsy because, though there was imperforate anus afterwards found to be due to atresia of the rectum, the persistent vomiting which was present was not associated with abdominal distension. Dissections were then shown of a series of specimens of imperforate anus and of atresia of the rectum and the explanation of the various examples was given from the developmental point of view, reference being made to the work of Dr. F. Wood Jones. —Mr. J. F. Dobson read a paper on Retro-pharyngeal Abscess. —Mr. J. Stewart made a communication on Enucleation of a Fibro-myoma of the Uterus during the fifth month of Pregnancy; pregnancy was uninterrupted.

NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.—A pathological meeting of this society was held on Jan. 11th, Mr. H. B. Angus being in the chair. —Mr. Angus showed: 1. A Seven Months Extra-uterine Foetation which he had successfully removed from a woman, aged 38 years, who had not been pregnant before. After a period of amenorrhœa she had several attacks of abdominal pain with vaginal hæmorrhage. The foetation lay in the left side of the pelvis but whether between the layers of the broad ligament or between the latter and the meso sigmoid could not be accurately made out. (The specimen was referred to a pathological subcommittee for further investigation.) 2. An Incomplete Tubal Abortion. 3. An Intra-peritoneal Rupture of the Gravid Tube. 4. Two specimens of Enlarged Prostate, both removed by the *suprapubic route*. The first patient was a man, aged 70 years. A mulberry calculus was found in the prostatic pouch. Though there was little bleeding at the operation reactionary hæmorrhage was so severe as to necessitate gauze packing. The man made a good recovery. In the second case, though the prostate was large, inviting enucleation, this was found difficult and it could only be removed in pieces. 5. A series of Vesical Calculi, the most interesting being a group of seven uric acid stones removed together with a small adenoma from the median lobe of the prostate. —Mr. John Clay showed: 1. An Epithelioma of the Pharynx from a female patient, aged 28 years, who had suffered from dysphagia for 14 years. 2. The Uterine Appendages from a patient who had acute diffuse tuberculous peritonitis. The symptoms were so sudden and severe that the peritonitis was thought to be due to the perforation of a hollow viscus. 3. A Granuloma of the Nail Bed from a patient the subject of diabetes. —Mr. G. Grey Turner exhibited: 1. Two specimens of Ectopic Gestation. The first was from a patient, aged 24 years, the mother of one child 13 months old. She was suckling and only missed one period. In the first attack of abdominal pain there was no uterine hæmorrhage but at the operation a four months foetus was removed from the right broad ligament. In the second case the patient menstruated in November and in December she was seized with a severe abdominal illness; there was no uterine hæmorrhage. The peritoneal cavity was full of blood which came from a very small tear in the uterine end of the tube; the ovary contained a recent corpus luteum. 2. A Patient Meckel's Diverticulum excised from a baby five weeks old. The patient was nursed at home by the mother and recovered without a bad symptom. 3. A Papilloma removed from the bladder of a man, aged 44 years, whose only symptom was slight hæmaturia. The diagnosis was made with the cystoscope. 4. The parts removed by epididymectomy from a patient who had Double Tuberculous Testicles. 5. A Fibro-adenoma from the Breast. It had been present as a small lump for years and only began to enlarge during pregnancy. 6. Calculi removed simultaneously from either duct of Wharton. —Mr. W. G. Richardson showed: 1. A Kidney with a large Calculus in the Pelvis removed post mortem; the opposite organ was large and normal. Mr. Richardson pointed out that with a painless lesion one kidney might be destroyed without giving rise to symptoms so long as the other kidney was healthy. If a patient had one functional kidney only and that became diseased symptoms at once became prominent; hence the frequency with which a single working kidney was met with in renal surgery. 2. Two examples of Prostatic Calculi removed by suprapubic cystotomy. Both were felt per rectum and by the sound and after being pushed on into the bladder were seen there by the cystoscope. In the first case the bladder was healthy and was entered, immediately healing per priam; in the second case drainage was employed. 3. A Large Number of Small Calculi removed by Lithotripsy Evacuator. 4. An Enormous Pedunculated Papilloma removed from the

Bladder. The patient had only once previously suffered from hæmaturia but operation became urgent because a process of the growth completely blocked the urethra, causing retention.—Mr. George Foggin showed a series of ophthalmic specimens: 1. An Epithelioma of the Cornea from a man, aged 62 years, who had been two years under treatment for supposed corneal ulcer. The orbit was eviscerated but recurrence took place and death ensued nine months after operation. 2. Sarcoma of the Iris from a girl, aged 15 years. Now, five years after removal of the eye, there was no recurrence. 3. Glio-sarcoma of the Retina. The patient was first seen at the age of six months but the parents refused operation; when three years old there was extreme proptosis. The orbit was eviscerated but rapid recurrence took place with sudden death four months after operation. 4. Hydatid Cyst of the Orbit removed from a child, two and a half years old. 5. An Eyeball with a Piece of Sheet Copper imbedded in it for 19 years. There was a thick bony cup surrounding the foreign body.

ROYAL ACADEMY OF MEDICINE IN IRELAND:
SECTION OF PATHOLOGY.—A meeting of this section was held on Jan. 5th, Dr. J. F. O'Carroll, the President, being in the chair.—Professor E. H. Bennett showed two specimens of Fracture of the Astragalus and said that some 25 years ago he published a paper on the supposed fracture of the tubercle of the astragalus, raising the question whether it was a fracture or not or a vestige of the os trigonum tarsi. The first of the two specimens exhibited on the present occasion showed a united fracture of the same region of the bone, without doubt a fracture well and truly knit. The anterior part of the tubercle with the groove for the tendon of the long flexor of the great toe had been broken and united with the minimum degree of deformity. There was, however, no means of knowing how the fracture had been produced. The second specimen showed a fracture taking effect on that part of the head of the bone that rested on the calcaneoscaphoid ligament, and it had not passed to any deeper extent than the cartilage.—Dr. R. Travers Smith exhibited some of the thoracic viscera of a man, aged 70 years, who had died in the Whitworth Hospital from flat-celled cancer of the œsophagus. The growth had caused a very narrow stricture and had grown by direct extension into the outer coat of the descending aorta. Numerous small secondary deposits were also found in the outer coat of the aorta and the bronchial lymph glands were cancerous. Imbedded in the wall of the left ventricle near the auriculo-ventricular groove was a secondary deposit of the size of a large hazel-nut which on microscopical examination made by Dr. H. O. Earl showed typical flat-celled arrangement. There were no metastases of the disease below the diaphragm with the exception of a cancerous deposit in a single lymph gland situated under the peritoneum on the anterior aspect of the stomach near the œsophagus and nearer the lesser curvature than the great. Dr. Travers Smith laid stress upon the frequency with which this gland was affected in internal, especially abdominal, cancer. He also spoke of the difficulty in fully explaining how the secondary deposit in this case had reached the heart.—The President said that an interesting point had been raised—namely, the dissemination backwards against the lymph stream. This must often happen also in various forms of tubercle. The particles carried by her have gone against the stream or else had been carried by the subclavian vein, returned by the vena cava, and going through the pulmonary system was deposited by the coronary artery in the heart.—Professor Bennett said that the same thing must occur in cancer *en cuirasse*, as the cancer certainly did not follow the lymphatic stream.—The President showed a hydrocephalic brain of a boy 17 years old, who had suffered for about six years from headaches and frequent subcomatose attacks lasting a few days. The cranium was not much larger than normal and was fully ossified. The ventricular cavities were considerably dilated but not to the degree of thinning the brain substance excessively. The greatest thinning was at the lower anterior part of the lateral ventricle where the cortex was adherent to the underlying bone. During the last couple of months of the boy's life a colourless watery fluid, recognised to be cerebro-spinal fluid, used to drip freely from time to time from the left nostril. It was evident that this discharge from the nostril came from the left ventricle by way of the adhesion of the temporoparietal lobe to the body of the sphenoid. During life the boy had been subnormal in intelligence but by no means an imbecile; he had learned to read

and to write and could perform simple mental calculations. He was of average height and weight and the head was not abnormally large but the sexual organs were poorly developed. The skin, of normal texture, seemed somewhat tightly drawn over the limbs as it ordinarily is on the outside of the thigh; but there was no scleroderma. There had been no ataxy. In walking his toes caught the ground now and again and Babinski's toe-extension sign was present, while increased knee-jerk and ankle clonus were absent. There was no proof of hereditary syphilis; his birth had been instrumental.—Dr. T. G. Moorhead described a case which had been under his care and in which hydrocephalus had occurred after pyrexia, lasting for 60 days, in a man, aged 65 years. There was no obstruction to the outflow and there was increase of the subarachnoid fluid. The cerebro-spinal fluid was distinctly turbid and he cultivated the bacillus coli communis from it. He regarded the hydrocephalus as due to inflammation of the ependyma.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Mr. T. J. Dabell, the President, being in the chair.—Dr. Arthur Whitfield of King's College Hospital, London, gave an address (with lantern illustrations) entitled "The Cutaneous Manifestations of Acquired Syphilis." In introducing the subject Dr. Whitfield criticised the way in which specific eruptions were often classified according to the lesion. It was customary, perhaps, to regard syphilis as a series of causes of disease rather than as a chronic and consistent disorder, and it was much better to recognise the lesions as syphilis than to use such terms as syphilitic psoriasis. In any doubtful case of primary sore it was wiser to await the appearance of additional symptoms than to make the diagnosis of syphilis erroneously, even if it were only in 1 or 2 per cent. of the cases. It was a serious thing to put a patient under a three years' course of mercury unnecessarily, apart from the injury to his feelings and self-respect. Dealing first with the initial lesion it was shown that induration was not always marked but depended rather on the local distribution of blood-vessels. The defined, rolling edge was its most characteristic feature but it was not always possible to diagnose syphilis from this alone, for on the one hand the initial lesion might not be characteristic and on the other apparently typical sores might be followed by no other symptoms. Other early symptoms to be waited for were adenitis and, most characteristic of all, an indurated lymphangitis on the dorsum penis, often bifurcating at its root. Proceeding to the earlier rashes, the usual characteristics of these were pointed out to be their generalisation, superficial site, multiformity, and absence of grouping, but these had exceptions. Illustrations were shown of the large papular, giant papular, small papular, follicular, corymbose, scaly, and bullous varieties, and attention was drawn to the histological basis of these various lesions. Passing to the early relapsing eruptions these were shown to be grouped, extending more deeply and less generalised but still usually symmetrical. Striking examples were shown of the psoriasiform and late corymbose conditions with atrophy of the centres of the patches and their histology was illustrated. Among the later rashes were shown a papular one with tendency to overgrowth, the cutaneous or grouped gumma, the late palmar and plantar syphilide with hypertrophy, and the large non-grouped subcutaneous gumma. The effect of syphilis on the skin of seborrhœic subjects was also explained. One of the most important points in treatment was never at any stage to overdose the patient with mercury, which, if it occurred, nearly always meant that the case became more resistant to treatment ever afterwards. Follicular eruptions were as a rule obstinate cases to treat. As the disease became older the potency of local treatment increased, while that of constitutional treatment diminished. An instance was given of a late palmar syphilide which after resisting all forms of mercury and iodide yielded satisfactorily to the x rays.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 11th, the President, Dr. H. W. Sykes, being in the chair.—Dr. W. R. Dakin read a paper entitled, "Do we Teach our Students Midwifery?" He began his paper by laying before the society some of the statistics available on the results of midwifery practice in this country, contrasting the death-rate in the lying-in hospitals with those obtained in private practice. He pointed out the striking results

obtained when antiseptic principles were first observed in lying-in hospitals, instancing the reduction in mortality by Semmelweis from 12 to 2 or 3 per cent. He further pointed out that at the General Lying-in Hospital, York-road, during the last 16 or 17 years no case of blood poisoning occurred which had started there. He then proceeded to show that the mortality from septic puerperal disease in the years 1835 to 1890 was 2.4 per 1000 births; during the period 1890 to 1895, 2.5; 1895 to 1900, 2.0; and in the single years 1901, 1902, and 1903 it was 2.2, 2.1, and 1.75 respectively. The numbers were, however, no better than in 1876 to 1880 as regards deaths from sepsis and were worse as regards total mortality. He considered that the medical men were responsible for the failure to improve. The two main causes of septicæmia were: first, that there were some medical men who did not know how to practise midwifery; and secondly, that asepsis was by a large number of medical men not considered a matter to be taken seriously in midwifery practice, although they believed that in surgery it was a vital element. The weak point was that the practice of the younger men was not devoid of septicæmia, although they had been inculcated from the very first moment in all the details of asepsis. Dr. Dakin blamed the way in which the student got his smattering of midwifery and held that the so-called practical work was simply a farce. He pointed out further the slight esteem in which the subject of midwifery was held by the examining boards, inasmuch as the student was supposed to get up the whole subject in little more than 30 lectures and could have done with it at the end of his fourth year. The student was left to obtain his practical knowledge unattended or having the services only of a qualified senior student to assist him. It might be said that independent charge of cases in this way was likely to engender habits of self-reliance, but if self-reliance was acquired on a basis of ignorance the result could only be disaster. The student should be thoroughly taught to know natural and unnatural conditions when he saw them and to conduct normal or any other labour aseptically. Dr. Dakin contrasted the much better methods prevalent in Germany, where the student was required to attend two and a half years' course regularly in a lying-in hospital and personally to have delivered four women in the presence of the teacher or the assistant physician. He urged the establishment of a large lying-in hospital. The rule would then be that a student before admission to the qualifying examination in midwifery in his fifth year, and, in fact, at the same stage as that at which he took his medicine and surgery examinations, should have attended regularly the practice of the lying-in hospital (to be established) for at least eight months and have personally delivered and subsequently attended 30 cases of labour in the following way: five cases must have been attended in the hospital under the teacher; during the time in which the labours of these five occurred he would reside in the hospital; he would have to make all the necessary examinations, abdominal and vaginal, and perform all the manipulations of delivery under the supervision of the teacher there. He would make full notes in each case, in a manner satisfactory to the teacher, of the patient's previous history, of the pregnancy, labour, and lying-in period, and of the progress of the child. The remainder of the 30 cases might be attended outside the hospital, preferably in the outdoor maternity of his own hospital. He would be still under the control of a teacher and would keep full notes of each case as before. Further, this practical midwifery work should be taken in his fifth year and not less than two years after passing his second examination. He would then appreciate something of what he was learning and he would go up for his medicine, surgery, and midwifery, which three subjects he would certainly have to practise simultaneously, at the end of his fifth year. Dr. Dakin then gave a sketch of the details of such a lying-in hospital.—The paper was discussed by Dr. G. F. Blacker, Dr. R. Hamilton Bell, and Dr. W. A. Malcolm.—A vote of thanks to Dr. Dakin closed the proceedings.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Jan. 16th, Dr. J. Barry Ball, the President, being in the chair.—Dr. T. Vincent Dickinson read a paper on Periodic Vomiting with Acetonæmia in Children. He said that this disease presented the following clinical picture. In the midst of perfect health without apparent or appreciable cause or error in diet or derangement of intestinal action the child, who was usually of a nervous or

arthritic diathesis, was suddenly seized with vomiting. This vomiting was produced by regurgitation without premonitory nausea as in tuberculous meningitis. The vomited matter, usually watery, was at first abundant and then diminished until the stomach was empty. Attacks occurred several times a day either spontaneously or excited by movement. The usual duration was from two to four or five days, and once at an end health was re-established immediately. During the attack there were much prostration, a clear tongue, constipation, and retracted abdomen; the pulse and temperature were slightly raised; the breath smelt of acetone, which was always found in the urine at some period of the attack. The cause had been variously attributed to the arthritic diathesis, hyperacidity of the gastric juice, faulty metabolism producing diacetic and oxybutyric acids, or xanthin and paraxanthin, or as a manifestation allied to migraine. Two theories lately brought forward were (1) that of Richiardi, insufficient function of the liver which in some cases is enlarged; and (2) that of Broca, latent appendicitis. The latest statistics by Comby of 24 cases show that in two only was the appendix implicated; 24 were girls and ten were boys, the average age being from two to ten years. There was enlarged liver in two cases; jaundice was rare; there was constipation in 30 cases; six were afebrile. These cases were met with in children of a neuro-arthritic diathesis and among the richer classes. Prognosis was almost always favourable. The treatment, founded on the idea of its being an acid intoxication, consisted in giving bicarbonate of soda in large doses, 15 grains every two hours. Edsall and Pierson claimed to have cut short the attacks by this, while Shaw and Tribe state that the vomiting itself seemed to have been more marked while taking it, although their case recovered. Griffith gave phosphate of soda without marked success, and Morgan states that morphine injections allay the vomiting and gives alkalies in some form combined with bromide of sodium. Rectal feeding and massage have their uses, and between the attacks the diet and bowels should be regulated and the general condition improved by hydrotherapy, exercises, and fresh air.

ESCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 19th, Mr. W. Campbell McDonnell, the President, being in the chair.—Dr. David Ross showed a case of Chronic Hydrocephalus following Cerebro-spinal Meningitis. A male child, aged three months, was vaccinated by him and a week later had convulsions which lasted about two weeks. He lapsed into a state of stupor and was apparently blind. Kernig's sign was present. On the face, the upper arms, and the chest there appeared bluish-red spots, likened to flea-bites by the friends. The bowels were constipated, wasting was rapid and great, and he screamed almost incessantly. The retraction of the head was so great that the friends thought the neck would break. For nine months the wasting continued until the child was almost a skeleton, then he gradually began to recover, and is now a fine plump child of two years. He sees and hears well and talks a little. The head is very large and heavy but the fontanelles are closed. He moves his legs freely but has no idea of walking or standing alone. Heubner described a chronic form of cerebro-spinal meningitis which might be protracted for from two to five or even six months, and might cause the most intense marasmus. It was not impossible that these protracted cases depended upon chronic hydrocephalus or abscesses of the brain. Lenhartz of Hamburg had observed 45 cases in ten years and was convinced that the best treatment was early and protracted lumbar puncture. For retraction of the head Dr. A. Merison said he had introduced an "occipital hammer" to slip up the child's head and he found that this made a child more comfortable and kept him quieter.—Dr. L. Darro showed a healthy Appendix ten and a quarter inches in length which he had removed from a man, aged 49 years, who had died from chronic alcoholism.—The President showed an eight months' Male Fœtus with the following congenital defects: hare-lip, lumbar spina bifida, club hands with absence of the left thumb, club feet, large hernia into the cord, and cyst of the cord. He also showed a photograph and two skiagrams.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 17th, Professor J. Lorrain Smith being in the chair.—Dr. Calvert Lockyer of London gave a lantern demonstration on the Development and Retrogression of the Corpus Luteum. The lecturer

pointed out that the majority of pathological processes associated with lutein tissue were not the outcome of changes in the corpus luteum itself but arose during the developmental stages of the Graafian follicle—i.e., before that body attained anything like its full maturity. In this way the different types of lutein cysts, also lutein hæmatomata, and even lutein abscess and calcification have, as a rule, nothing to do with the yellow body. Such changes take their origin for the most part in atresic follicles which have acquired a lutein lamina before undergoing retrogression. Mention was especially made of the type of lutein cysts which the lecturer described as "composite lutein cystomata"—large tumours, that is, which he had only found in association with vesicular mole and chorio-epithelioma. The actual causation of this peculiar type of lutein excess was still obscure but its relationship to the ovular changes could scarcely be accidental, nor did the speaker think they were secondary as did the German authority Gottschalk. The fascinating theory that lutein excess accounted for trophoblastic overgrowth had occupied Dr. Lockyer's close attention, but control investigations on ovaries from cases of normal gestation and chorio-epithelioma failed to convince him that excess of lutein tissue was peculiar to vesicular disease and chorio-epithelioma. Another difficulty which stood in the way was the possible confusion of displaced lutein tissue and decidual reaction in the ovarian stroma, and the lecturer threw out the suggestion that the lutein cell and the decidual cell were histogenetically one.—Professor R. Favell (Sheffield) showed a Uterus and Ovaries, the former containing a hydatid mole and the latter lutein cysts.—Dr. O. Oldfield (Leeds) showed a specimen with Double Lutein Cysts and Chorio-epithelioma of the Uterus.—Other preparations were shown as card specimens.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 19th, when the following office-bearers were elected. President: Mr. R. Favell. Vice-Presidents: Sir William J. Sinclair, Dr. D. Lloyd Roberts, Mr. Owen Bowen, Dr. Arthur J. Wallace, Dr. J. Braithwaite, Dr. C. J. Wright, Dr. John W. Martin, and Mr. Percival E. Barber. Honorary treasurer: Dr. E. Octavius Croft. Honorary general secretary: Dr. W. E. Fothergill.—A valedictory address on the Evolution of Operative Gynæcology was then delivered by Dr. Lloyd Roberts, the retiring President, which is published at p. 207 of this issue of THE LANCET.—Dr. J. B. Hellier showed a Pelvis deformed as the result of Infantile Paralysis. There was deficient development of the os innominatum of the paralysed side and the normal flattening which takes place between birth and maturity was exaggerated on the sound side, on which extra weight had been thrown. There was a difference of half an inch between the oblique diameters at the brim. The outlet was much contracted, the ischial spines being three and a quarter inches apart, while the tip of the coccyx was within one and three-quarter inches of the symphysis and deviated three-quarters of an inch to the right.—The usual dinner was held at the Queen's Hotel, Mr. Favell being in the chair.

Reviews and Notices of Books.

Die Anatomie der Taubstummheit. (*The Anatomy of Deaf-mutism.*) Published in the Proceedings of the German Otological Society. First part. Contents: I. SIEBENMANN, Malformations of the Ossicles and Fenestræ; Collapse of the Ductus Cochlearis, all three walls of which show signs of progressive dilatation. With five Figures in Tables I. and II. II. WATSUJI, Histological Researches on Deaf-mutism. With three Figures in Table III. III. POLITZER, The Anatomical Condition of the Organs of Hearing in a Deaf and Dumb Patient, with six Figures in Table IV. With four Tables. Wiesbaden: J. F. Bergmann. 1904. Pp. 20. Price 5s. 6d.

It appears that the inception of this work was due to some remarks made by Professor Arthur Hartmann of Berlin in 1903 at the German Otological Society, when he justly said that few had any knowledge of the auditory apparatus of deaf-mutes, and it was with a view to a more general extension and distribution of such knowledge that this book was published. It will be welcomed by all earnest students in

otology and pathology and it is much to be desired that a work of such importance should be rendered into English. In this, the first part, Professor Siebenmann, Dr. Watsuji, and Professor Politzer are the contributors.

Professor Siebenmann's contribution to this part consists in a detailed description of the pathological conditions found in the case of a man who died when 53 years of age. He had been born deaf although there was a slight appreciation of speech. On the left side the following macroscopical conditions were observed. The meatus and the drum were normal. In the middle ear the long process of the incus was of normal thickness and strength, exceeding the normal by 2 millimetres in length. The posterior limb of the stapes was firmly bound down by scar tissue and the capsule of the inco-stapedial joint was connected with the fibrous sheath of the facial nerve. The posterior limb of the stapes was thick and long, the capitulum was markedly stronger than usual, and the foot plate was much thickened. The articular cartilages were atrophied, with a tendency towards rarefaction of the ossicles and the round window was very much diminished in size. The labyrinth was particularly rich in pigment. There were numerous changes in the posterior half of the membranous labyrinth. The bony divisions in the cochlea were thin. In the upper part of the modiolus the bone was absent. The changes in the nervous apparatus were also of great importance but space does not admit of a full description. This case is illustrated by two plates consisting of five figures. The first is a section from the malleus and incus, showing thickening of the bones and the connexion between the long process of the incus, the stapes, and the sheath of the facial nerve. Fig. 2 is a micro-photograph of the cochlea, showing the want of development in the organ of Corti.

The histological study of deaf-mutism is the contribution by Dr. Watsuji. The preparations were made from the ears of a patient who died at the age of 41 years. This was a case in which it was impossible to determine from the patient's statements whether the defect was congenital or acquired. His wife was a deaf-mute but his children had normal hearing. In this case in both ears, with the exception of narrowing of one of the semicircular canals, the chief changes were found in the cochlea. The description is illustrated by three plates of exquisite workmanship.

Professor Politzer's contribution is quite short compared with the last mentioned. Here also the changes were most marked in the cochlea. The illustrations of microscopical sections in this instance are most beautiful.

The earliest work with which we are acquainted which is of really scientific value in connexion with this most abstruse and interesting abnormal condition is that by Mr. Cock, the well-known surgeon of Guy's Hospital, who made a large number of dissections in the early part of the last century. His contribution to the science was necessarily macroscopic but in all his cases the prominent feature was the non-development, or obstruction by bony growth, of the semicircular canals. This does not appear to have occurred or to have been noticed in these three cases and if it was not noticed by such observers we may justifiably assume that it did not exist.

It is, however, somewhat to be regretted that no very detailed description is given of the absolute state of hearing, or the remnant of hearing, with the exception of that by Dr. Watsuji, from which we learn that bone conduction for the watch was present but no vocal sound whatever was heard. There was a slight perception of Galton's whistle and the patient was able to hear C (of 128 vibrations) by bone conduction on the right side. This in itself is an extremely interesting observation, though the maximum of hearing, what may be termed the better ear was only seven seconds. Here we meet immediately with a difficulty, a difficulty

which meets us in all hearing tests, and that is, that the weight of the blow of any tuning fork is not a universal standard, and so we are in England no wiser than if the author had merely stated "perception of sound."

This work emphasises the high pitch of excellence to which otology has advanced amongst the German-speaking races and the freedom from petty jealousies which enables men of such world-wide repute to work together for the advancement of their specialty. The three authors are deserving of high praise; they have produced the first part of a series which, we are convinced, will form a standard on the subject.

The Vermiform Appendix and its Diseases. By HOWARD A. KELLY, A.B., M.D., Professor of Gynecology in the Johns Hopkins University, Baltimore; and E. HURDON, M.D., Assistant in Gynecology in the Johns Hopkins University, Baltimore. With 399 original illustrations, some in colour, and three lithographic plates. London and Philadelphia: W. B. Saunders and Co. 1905. Pp. 827. Price 42s. net.

WE think it will be long before any larger work than this on the appendix will appear. The volume before us has more than 800 pages and about half as many illustrations and we may add that it weighs some seven pounds. Clearly no exertion on the part of the authors and no expense on the part of the publishers have been spared to make this the fullest and most thorough work on the subject. No one can complain that the authors have taken too narrow a view of their task, for they have devoted more than 50 pages to the history of the subject. They have given nearly 150 pages to the anatomy of the appendix and the other departments of the subject have been equally generously treated. Even the medico-legal aspects of appendicitis have not been forgotten. To describe more particularly one division, we may mention the contents of the anatomical section. The embryology of the appendix is first described and numerous illustrations of the embryo are given at various ages from six weeks to seven months and a series of diagrams shows that the appendix is a retrogressive organ, as at first it is merely the distal portion of the caecum but fails to maintain the same degree of development as the rest of that portion of the colon, so that ultimately its calibre is far less. An account of the comparative anatomy of the caecum is then given and the authors show the enormous variations in form which occur even amongst the mammalia. Comparatively few animals are favoured with the possession of an appendix caecal and man is one of them. The next point of the anatomy dealt with comprises the peritoneal folds of the caecum and their importance is maintained. The variations of the meso-appendix are described and the varieties of the supplying arteries. The arrangement of the ileo-caecal region and its valves is also discussed. Then comes an account of the possible points of origin of the appendix and the directions which it may take. The very great variations in the position of the appendix are often of the greatest importance to the surgeon. The length and the structure of the organ, both naked eye and microscopical, are fully dealt with. The accounts of the blood-supply, the lymphatics, and the nerves occupy a chapter to themselves.

We have said enough to indicate the very elaborate scale on which the book is written and we may add that the authors are careful to give credit to whom it is due. Quotations from other writers are freely given and in many cases these are in the original language in which they were written. We have nothing but praise for the work as a whole; here and there there are points where we might feel inclined to differ from the views expressed by the authors but in nearly every portion of the subject opinion is in a state of flux and the views held to-day may differ widely from those prevalent to-morrow. The work is especially suited to physicians or surgeons who wish to have in one

volume the essence of all that has ever been written about the appendix, and though it is too voluminous for the busy general practitioner yet anyone who can spare the time even to dip into its pages will find himself well repaid by the pleasant style and the interesting facts therein contained. The authors evidently contemplate a second edition as they tell us that it will contain a fuller account of leucocytosis in relation to appendicitis.

The Book of Prescriptions (Beasley) with an Index of Diseases and Remedies. Rewritten by E. W. LUCAS, F.I.C., F.C.S., late Examiner to the Pharmaceutical Society of Great Britain. With an introduction by ARTHUR O. LATHAM, M.A., M.D. Oxon., F.R.C.P. Lond., Senior Assistant Physician at St. George's Hospital and Assistant Physician at the Brompton Hospital for Consumption. Eighth edition. London: J. and A. Churchill. 1905. Pp. 366. Price 5s.

THE fact that this publication has reached an eighth edition is sufficient proof that it has been duly appreciated. The book contains an excellent series of prescriptions illustrating the employment of the materia medica in general use. It also comprises notes on the pharmacology and therapeutics of the principal drugs and the doses of their preparations. The quantities of the various medicaments employed are expressed according to the imperial system, but the practical equivalents according to the metric system are also given.

As Dr. Latham states in the introduction, medical students of the present day have seldom mastered the difficult art of prescribing at the time at which they obtain their qualification to practise. In consequence of this defect in the medical training the qualified man starts on his career imperfectly informed in a necessary part of his professional duties. He has to learn laboriously when his opportunities may be few and in certain instances he may be tempted to rely too much on various proprietary mixtures. Further, whilst in hospital he generally sees prescriptions written according to certain titles, such as "haust. gent. alk.," "haust. ferri c. mag.," but if questioned as to the ingredients of such mixtures he may fail to give a correct answer. A work of the kind that we are considering, if properly used, helps to remedy such defects, and a study of the numerous prescriptions which are given should prove of the greatest service to the young practitioner. Every drug in common use is included in the present edition; in considering each one the physical and chemical characteristics of the various preparations are mentioned. The therapeutical and medicinal values are precisely indicated and the doses, as we have already remarked, are stated according to both the imperial and the metric systems. The various prescriptions are accurate and trustworthy. We can recommend this manual to senior students and practitioners as a useful adjunct to the ordinary text-books on medicine.

Report on Sanitary Measures in India in 1903-04. Vol. XXXVII. London: Printed for His Majesty's Stationery Office by Darling and Son. 1905. Pp. 203. Price 1s. 8d.

THIS report is prepared for presentation to Parliament. It contains chapters on the health of the European and native troops, on the health of prisoners in jails, and on the health of the general population; it also contains chapters on vaccination, on medical institutions, including medical schools and lunatic asylums, and a chapter on sanitary works. Appended to the report are abstracts of reports by the principal Sanitary Commissioners in India and memoranda by the Army Sanitary Commission in England reviewing the several sanitary reports for India. The report shows that there was a marked improvement in the health of the European troops serving in India during the year 1903; the daily sick and invaliding rates were much lower than in the previous year and the death-rate improved.

On an average strength of 70,445 the admissions into hospital were in the ratio of 1033 per 1000, against 1078 in 1902; the daily sick-rate fell from 66 to 63. The invaliding ratio (29) was lower by 8 per 1000, so that the total loss by death and invaliding was equal to 42 per 1000, a decrease of 10 per 1000 on the previous year. Madras and Burma had the highest sick-rates and Bengal and Burma the highest death-rates. The chief causes of sickness in the whole European army were venereal diseases and ague; the former yielding a ratio of 247 per 1000 against 281 in 1902 and the latter 243 per 1000 against 247. 47 per cent. of the total sickness resulted from these two causes. Enteric fever, as usual, was the chief cause of mortality, the death-rate being slightly lower than the ratio of the previous year. Cholera was very prevalent and among the European troops 81 cases were recorded with 57 deaths. Among the European troops in India there were during the year 68 cases of small-pox with eight deaths. Enteric fever was more prevalent than in the previous year. There were 12 cases of plague among the European troops and two deaths. Venereal diseases ranked first in the list of causes of admission to hospital and first in the causes of invaliding. They were the cause of nearly 24 per cent. of the total sickness during 1903 and of 10½ per cent. of the invaliding of the European army. Venereal diseases were ten times more prevalent among the European troops than among their comrades of the native army. The Gurkhas invariably suffer in a much higher degree than the rest of the native troops.

The health of the native army during 1903 was exceptionally good. The admission and constantly sick rates were the lowest on record and the death-rate was lower than in any previous year. The chief cause of sickness in the native army was ague. Pneumonia was, as usual, the chief cause of death. From cholera there were 80 deaths in the native army and there were 184 cases of plague with 115 deaths. As regards the general population, the health of the people was less satisfactory chiefly owing to the prevalence of cholera and plague. Malarial fever was less prevalent than in the preceding year, but nearly twice as many deaths were recorded from plague as in 1902. The Punjab was the unhealthiest province in India in 1903. The health statistics of the jails show a further satisfactory improvement in the health of the prisoners. Vaccination is steadily being advanced, there being an increase of 25,734 operations on the number of the previous year. With regard to sanitation, in Calcutta substantial progress was made during the year in ridding the city of many objectionable and insanitary collections of native huts, resulting in the opening up of many unhealthy areas by the construction of public squares. In the Punjab good progress was made during the year in the important works which have been undertaken for the improvement of the sanitation of Simla and in the waterworks of Aurlitsar city. In Madras city progress was made with the new drainage scheme and in Bombay city progress was made with the special drainage works. In the report the question of the prophylaxis of malarial fevers is discussed as a whole in "General Remarks" (p. 122). There can be no doubt that the efforts put forth during the year under notice have been far more general, more complete, more consistently and energetically maintained, and better organised than heretofore. At the same time, signs are not wanting that in many respects the work of prophylaxis has yet to be developed in its range and in completeness before measurable results can be hoped for.

LIBRARY TABLE.

The Source of the Blue Nile. By ARTHUR J. HAYES, L.S.A. Lond. London: Smith, Elder, and Co. 1905. Pp. 315. Price 10s. 6d. net.—Mr. Hayes was the medical

officer of a survey party which was despatched to make observations as to the annual rise of the Blue Nile in connexion with the works for the great Assuan dam. The Blue Nile rises in Lake Tsana which is in Abyssinia. Thither Mr. Hayes and his companions wended their way, starting from Khartoum and returning by way of the Atbara valley. Mr. Hayes has written a pleasant and chatty description of the expedition. He is evidently not an experienced traveller but he is observant. Thus he notes with somewhat naive astonishment (p. 61) some ordinary "pot holes" in the bed of the Geerar river. Where his own information or knowledge is deficient he supplements it in modest and praiseworthy fashion from that gathered by other travellers. With these qualifications Mr. Hayes should one day produce a book of value if his lot should again lead him into out-of-the-way places. With regard to the vexed question as to whether birds of prey, especially vultures, are attracted by sight or smell, Mr. Hayes says that his observations agree with those of Sir Samuel Baker, from whose book, "The Nile Tributaries of Abyssinia," he gives a long quotation. Baker thought that sight was the sense which played the principal part. Readers of Waterton's delightful essays will recollect that that eminent but obstinate traveller came to exactly the opposite conclusion in his controversy with Audubon. In THE LANCET of Sept. 9th, 1899, we commented, under the heading of "An African Mystery," upon a curious experience undergone by Captain Welby, whose early death was a great loss to scientific geography. Welby was travelling through the Walamo country which lies to the south of Adis Abeba which again lies some way to the south of Lake Tsana. A curious kind of demoniacal possession afflicted those who travelled in the country and this was specially prone to happen if the traveller took any food while the Walamo were looking at him. Welby as an avowed disbeliever tried the experiment and the next day he says "I felt thoroughly ill." Mr. Hayes came across a somewhat similar belief at the village of Bahrdar Georgis (St. George is a famous saint in Abyssinia), which lies just at the exit of the Blue Nile from the lake. In this village any person of rank is carefully shielded from view while he eats or drinks in order to protect him from the evil eye. The book is illustrated with excellent reproductions of photographs and has an appendix containing a note upon the religion and customs of Abyssinia, the information in which has been mainly collated from the works of previous travellers. An interesting description is given of a disease allied to demoniacal possession which is known by the name of *bonda*. Altogether the book is well worth reading but we hope that when the next edition appears an index will be provided.

A Guide to Diabetic Cookery. Published by Callard and Co. Price 1s.—To arrange a suitable diet table for a diabetic patient which shall offer sufficient variety to tempt the appetite while not transgressing the limits laid down by the physician needs a considerable knowledge of cookery as well as of medicine. This little book should prove very useful to those who have to undertake the management of such a case. A large variety of recipes are given, embracing soups, meats and savouries, puddings, and so on, all made from ingredients which are permitted to diabetic patients. Some doubt may perhaps arise as to the advisability of using any considerable quantities of glycerine for diabetic cookery in view of Luthje's experiments, but probably the small amounts necessary for sweetening would do no harm in ordinary cases.

On Active Service with the St. John Ambulance Brigade (South African War, 1899-1902). By the late WILLIAM B. INDER. Demy 8vo, with 25 illustrations. London: Dale, Reynolds, and Co. 1905. Pp. 318. Price 5s.—The author of this book was the late Sergeant W. S. Inder of the Kendal

Division of the St. John Ambulance Brigade. The chief attraction of the volume is the clear account of many of the chief incidents of the South African campaign, but the book contains much good-humoured gossip about the St. John Ambulance Brigade, Scottish Horse, and Active Service Volunteers which will be read by many with considerable pleasure. It is a brightly written narrative of a faithful man's work and it brings the scenes passed through vividly before the reader. The sketches of scenes among the field hospitals afford realistic pictures of the medical side of the war. The author went out to South Africa in December, 1899, on the s.s. *Simla*, and landed in time to help to look after the wounded Highlanders after Magersfontein. He was evidently a keen and capable ambulance man, deservedly popular with all the staff, and his diary is written with a literary skill much above the average. Throughout the book we are brought face to face with a kind, sympathetic, and loveable nature, and we realise that it was such men as he who made the St. John Ambulance orderly so much appreciated in South Africa. We recommend the book to the notice of those who are interested in the history of the war and specially to those who work for the St. John Ambulance Association.

The Nursing of Sick Children. By JAMES BURNET, M.D. Edin., M.B.C.P. Edin., Registrar and Assistant to the Extra-Physicians, Royal Hospital for Sick Children, Edinburgh. London: The Scientific Press 1905. Pp. 66. Price 1s net.—These pages are intended to serve merely as an introduction to this subject. The author hopes that a careful perusal of this handbook will supply to a certain extent the want of special training in children's ailments in nurses who have had but little opportunity afforded them of acquiring a knowledge in children's wards. Nurses, however, who are devoting their attention specially to children will doubtless find the information contained in this book helpful. The recommendations are quite sound; they are at the same time simple and capable of being easily understood. The information has evidently been carefully put together, the directions are explicit, and but little is left to the nurse's imagination. We regard it as a helpful little manual.

Guy's Hospital Nursing Guide: Handbook of Nurses' League and Register of Nurses Trained at Guy's Hospital. Third issue. London: Ash and Co. 1905. Pp. 150. Price 1s 6d.—The original object in view in the preparation of this work was simply to provide a handbook of the Nurses' League of Guy's Hospital and a register of the nurses trained at that institution. In the course of preparation the desirability was recognised of including a section which would be of general service to the community. The first part of the book contains a nursing guide which we can recommend as a trustworthy source of information to those who are thinking of entering upon the work of nursing. Those who are attracted to this work will here find advice and knowledge which will enable them to form a just opinion of what is before them during their careers. The register of the nurses is as useful and comprehensive as in the former issues of this book.

Cattle Tuberculosis. By HAROLD SESSIONS, F.R.C.V.S., F.H.A.S., F.R.G.S. Second edition. London: Baillière, Tindall, and Cox. 1905. Pp. 130. Price 2s. net.—This brochure is intended as a practical guide to the agriculturist and meat inspector and quite fulfils its object, as it gives in a concise and practical manner an up-to-date aspect of the latest theories and practical facts in connexion with tuberculosis in cattle. It is a little book which we can thoroughly recommend to the favourable notice not only of the practitioner but of every medical officer of health. It deals thoroughly with the cases of tuberculosis, not only of cattle but of the human being, and one chapter is devoted to a comparison between human tuberculosis and that of bovine, statistics

being given in tabular form to illustrate various points. The origin of the disease, the symptoms and diagnosis, and the use of tuberculin as a means of detection and prevention are clearly discussed, as are also the regulations dealing with milk and meat. In the chapter on the disposal of affected carcasses Mr. Sessions quotes the methods which are employed in foreign countries and particularly lays stress on the sterilisation method which is so satisfactorily carried out on the continent. The book is well got up and we are sure that it will find a ready sale.

The Animal Parasites of Man. By Dr. MAX BRAUN. Third edition, with 234 illustrations. Translated by PAULINE FALCKE and brought up to date by LOUIS SAMBON, M.D., Naples, and FRED. V. THEOBALD, M.A. London: Bale, Sons, and Daniellson. 1906. Pp. 453. Price 21s. net.—Braun's work on human parasites is well known in Germany, in which country it has reached a third edition, and the translators have certainly done a service to the English-speaking profession in bringing it within the reach of all in this country who are interested in parasitology. In the present day the study of parasites has become such an essential feature, especially to those whose work takes them to tropical countries, that it might almost be said to have become a specialised science. It would be almost invidious to pick out any particular chapter as all are of the utmost interest, but we may legitimately be pardoned for particularly drawing attention to the illustrations and descriptions of the mosquito. However, every part of the book is full of interest and it quite fulfils the purpose for which it is said to be destined—viz., a handbook for students and medical men.

Essentials of Physiology for Veterinary Students. By D. NOEL PATON, M.D., B.Sc. Edin., F.R.C.P. Edin. Illustrated. Edinburgh: William Green and Sons. 1905. Pp. 428.—There are many points of difference between the physiology of man and of lower animals and it is quite necessary that the veterinary student should be taught specially and not be allowed to gain his knowledge merely from a medical textbook. Dr. Paton, who at one time occupied the chair of physiology in the Royal Veterinary College, Edinburgh, and who is at the present time one of the examiners of the Royal College of Veterinary Surgeons, has endeavoured in as concise a manner as possible to place together the essentials of the general and special physiology of the domesticated animals in a form suitable to the requirements of students and practitioners of veterinary medicine. The general aspect of physiology is deeply entered into and no efforts are left undone to make it easily understandable and complete, and the special aspect, as it applies to the various domesticated animals, has been touched upon, although not quite so fully perhaps as the student of veterinary physiology could have desired. Many of the plates, too, are of the human organs and would be better if taken from the animals themselves, but probably this side will receive more attention when the book reaches, as we are sure it will, a second edition. The book is a useful one and will form a welcome addition to the veterinary student's library.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—This magazine opens the new year with an excellent number. It contains two articles of interest upon the tuberculosis question—one by Dr. R. W. Philip on the Erection of Municipal Dispensaries and another by Dr. John Robertson on Prevention of the Disease by Means of Notification along with the provision of sanatoriums and homes for consumptives. A preliminary communication by Dr. J. Eason deals with the pathology of paroxysmal hæmoglobinuria and attributes the phenomena of this condition to the presence of a special hæmolytic amoceptor in the serum. Mr. H. Alexis Thomson records the notes of four cases—three of malignant disease and one

which subsequently proved to be a papilloma—treated with Doyen's serum, apparently without good results. Mr. H. Harvey Littlejohn and Mr. T. W. Drinkwater deal with poisoning with arsenious acid, calling attention to the occurrence of yellow sulphide of arsenic in the alimentary canal.

The Scottish Medical and Surgical Journal (January).—Professor John Chiene, the retiring president of the Medico-Chirurgical Society of Edinburgh, in a valedictory address deals with the history of the society during the past 50 years. Dr. B. P. Watson publishes the results of some experiments on rabbits to elucidate the effects of withdrawal of the liquor amnii, which is followed by death of the fœtus and degenerative changes in the placenta; the latter closely correspond with those described by Eden in the retained human placenta. Dr. David H. Stirling gives some statistics of results obtained at a sanatorium for tuberculosis and Mr. H. M. W. Gray comments on a variety of surgical conditions, especially dealing with the use of vaccines in surgical cases.

The West London Medical Journal (January).—This number opens with two short papers on climatic subjects, the first by Dr. S. A. Bontor dealing with Jamaica as a Health Resort and the second by Dr. W. S. Colman with some French Health Resorts. Dr. A. P. Beddard gives an account of recent work on the Opsonic Powers of the Blood and manages to make this rather difficult matter intelligible to those who have not previously studied the question. Dr. D. G. A. Chowry-Muthu sets forth his belief that static electricity is of value in the treatment of pulmonary tuberculosis.

The Medical Chronicle (December, 1905).—In this number Professor W. Stirling's article on Coöperation and Adaptation in Digestion is concluded. The second part deals with modern work and points out the two kinds of stimuli which give rise to secretion of digestive juices, the hormones or chemical excitants acting slowly and continuously, and the nervous impulses acting quickly. Mr. E. D. Telford records a case of Umbilical Hernia in which perforation of the small intestine in the sac was caused by the presence of a piece of rabbit's bone.

New Inventions.

THE EQUIPOISE BED, COUCH, AND CARRYING CHAIR.

At the Institute of Hygiene, 34, Devonshire-street, London, W., a bed of ingenious construction is on exhibition, which has been brought out by the Equipose Couch Co., Ashford, Kent. The mechanism is that of a ratchet wheel and pawl with crank-handle attachment, enabling the top part of the bed to be manipulated and fixed at any angle required. When the desired position has been reached it can be there retained for so long a time as is necessary. The mechanism works so smoothly that the position of the patient's head and shoulders, however helpless or heavy he may be, can be changed as often as wished for and without the slightest difficulty by the nurse or attendant. If the patient is able to use his arms he can easily adjust himself to whatever position he wishes with the smallest possible exertion. If, on the other hand, he is suffering from acute heart disease or from a malady in which any exertion is dangerous the nurse can alter his posture so easily that he is scarcely conscious of movement. Another advantage claimed for the bed is that the bottom can be dropped, an arrangement which provides a double inclined plane, thus affording relief to the thighs and the legs. The bed is intended for the use of invalids and should serve its purpose well. The illustrations represent two of the many positions which may be given to the bed. The price is five and a half guineas. It may be upholstered in imitation leather, tapestry, or morocco at an additional charge, and handles are supplied for use when the bed is carried about with a patient lying on it. Chairs, couches, and surgery

FIG. 1.

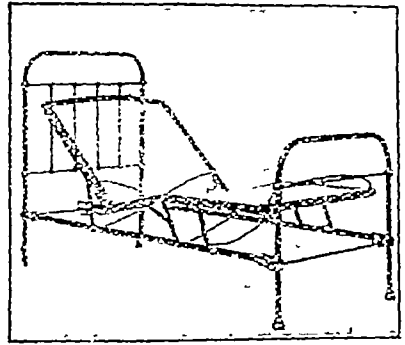
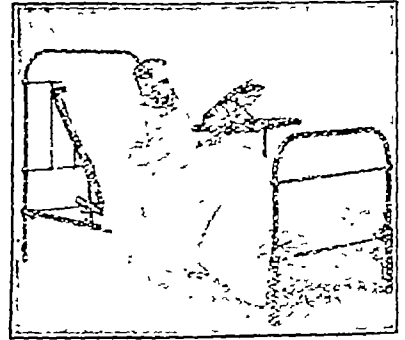


FIG. 2.

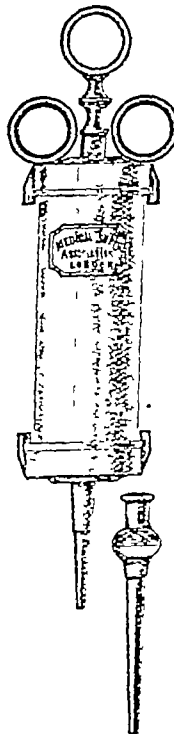


chairs are constructed by the Equipose Co. upon the same principle but none of these were on exhibition.

AN ASEPTIC EAR OR WOUND SYRINGE.

THE defect of most piston and other syringes which are filled through the nozzle is the great difficulty of keeping them "surgically" clean. The instrument shown in the illustration, however, since its parts are made entirely of metal and readily separated, can be easily sterilised. Further, its makers have, at my suggestion, added a nozzle which, being detachable, not only enables the syringe to be filled without risk of contaminating its interior through an infected aperture but also facilitates the cleaning of the nozzle itself, precautions of the utmost importance in aural treatment. In use the syringe is filled with fluid through the fixed nozzle, after which the detachable nozzle shown at the side is slipped over the fixed one and the fluid is ejected in the ordinary way. Before refilling the syringe or proceeding to the other ear or to the next patient the detachable nozzle is removed and cleansed. A convenient length for these nozzles is four inches; it will sometimes be advantageous to have more than one of them. The syringe may be had in sizes of one, two, three, and four ounces. It is made by the Medical Supply Association of 228, Gray's Inn-road, London, W.C., with nozzles of various sizes.

V. H. WYATT WINGRAVE, M.D. Darb.



Stratford-place, W.

THE LANCET.

LONDON: SATURDAY, JANUARY 27, 1906

The Value of the Tuberculo-opsonic Index in the Diagnosis and Treatment of Tuberculous Infections.

THE Royal Medical and Chirurgical Society is to be congratulated upon the success of a recent discussion of the vaccine treatment of tuberculous infections.¹ The convening of symposial meetings for the consideration of the work of different observers, who are attacking the problems of a given disease along similar lines but from different standpoints, frequently affords valuable assistance alike to the investigators themselves and to the profession of medicine in general. The former often receive useful suggestions and encouragement in their work, while the practitioner may be enabled to extend his usefulness or to improve his mode of procedure by the adoption of the advances which may be thus established. The present time is an appropriate one to consider the value of the attempts to produce a specific cure for tuberculosis. The various anti-tuberculous sera hitherto introduced have given at best but disappointing results and Dr. W. BULLOCK² in his paper read at the above-mentioned meeting was inclined to regard the era of tuberculous serotherapy as past. There is, on the other hand, at present a disposition to return to the use of some vaccine; in other words, to revert to the method originally introduced by KOCH, for it should be borne in mind that all the forms of tuberculin and its many derivatives are technically vaccines—i.e., dissolved or suspended substances derived from the bacilli. This method has been consistently defended and modified by him and adopted with some measure of success by TRUDEAU, POTTENGER, TURBAN, PETRUSKEY, and other observers. TRUDEAU's conclusions are of special interest, since as a result of observation of a series of cases extending over 12 years he found that the inoculation of tuberculin used as an adjunct to sanatorium treatment gave a larger percentage of "cures" and a smaller percentage of relapses than sanatorium treatment alone. In this country tuberculin after the first disappointment at its results fell into disrepute, and both it and its successors have been but little used. But the illuminating and exact researches of Professor A. E. WRIGHT have demonstrated the value of the method of treatment by tuberculous vaccines and have afforded an index by which to gauge the effect of the inoculations and to determine the times at which they should be given.

The discovery of opsonins and the investigation of the opsonic index are of such importance that we

may perhaps be pardoned if, assuming that not all of our readers are familiar with them, we briefly outline the principles and technique of Professor WRIGHT's researches. The study of immunity and of the reactions in the body produced by bacterial invasions has established the fact that the protective mechanism is a complex one, involving both the chemical agencies of certain antibacterial substances in the serum and tissue fluids and the vital activities of the phagocytes. The protective substances exert their influence by combining with the chemical constituents of the bacteria and are therefore called bacteriotropic substances by KOCH. According to the effect which they produce they are called agglutinins, bactericidal substances, bacteriolyins, or opsonins. The opsonins apparently prepare the bacteria for ingestion by the phagocytes, since if normal white corpuscles be washed with isotonic salt solutions so as to get rid of the serum the corpuscles will no longer ingest bacteria, but they will do so at once in the presence of normal serum. The opsonic index for a given organism is the ratio of the opsonic power of the serum to be tested to that of a normal person. This is determined by taking in a capillary tube equal quantities of washed blood corpuscles, of a suspension of tubercle bacilli, and of the serum to be tested, mixing them and incubating for about 20 minutes, and then determining the average number of bacilli ingested per corpuscle. Precisely the same determination is made with a normal serum or the mixed serum of several normal persons. The ratio of the two numbers obtained gives the opsonic index of the first serum. The tuberculo-opsonic index in healthy persons seems to be very constant; thus in various series recorded independently by Dr. BULLOCK, by Dr. DAVID LAWSON and Dr. I. S. STEWART, and by Dr. G. W. ROSS the opsonic index found in healthy persons was always between 0.8 and 1.2, giving a mean of 0.95. In tuberculous subjects, on the other hand, very considerable variations are found. Professor WRIGHT maintains, and all the above observers support his contention, that an index beyond the normal range—i.e., below 0.8 or above 1.2—is strongly suggestive of the presence of tuberculosis. Dr. ROSS, indeed, has stated that he had never found an opsonic index of 1.3 in any case that was not definitely tuberculous. On the other hand, in 75 per cent. of his cases of lupus Dr. BULLOCK found an opsonic index below the lowest normal limit of 0.8. These apparently paradoxical results find a very plausible explanation in the observations of Professor WRIGHT who maintains that two classes of bacterial invasions exist, in one of which—the local infections—the opsonic power remains permanently low and does not vary, while in the other class—the systemic infections—it fluctuates and is frequently above the normal. In the former the mechanism of protection is not set into action owing to the local character of the infection and the rarity with which bacteria or their products reach the general circulation, whereas the variations of the index in the general infections are due to auto-inoculations of bacterial elements. When the effect of an injection of a vaccine is considered it is found that the first result is invariably a diminution in the protective substances, as shown by a lessening of the opsonic power. This is referred to as the "negative phase" and is followed by an increase of the protective power

¹ THE LANCET, Dec. 2nd and 9th and 16th, 1905.

² THE LANCET, Dec. 2nd, 1905, p. 1603.

and a rise in the opsonic index beyond the original height, constituting the "positive phase." This increased height may be maintained but in the case of tubercle vaccines it usually comes down to its original level. Professor WRIGHT finds that negative phases can be superimposed if successive inoculations succeed one another too rapidly, thus lowering the patient's resistance and producing injurious effects, whereas it is difficult in the case of tubercle vaccines to obtain cumulation of positive phases. He has by this means explained the variable and disappointing results obtained with tuberculin by some observers, while he maintains that the determination of the opsonic index is an indispensable guide to the administration of successive doses and to the quantity to be given. For example, if with successive doses the negative phase becomes less marked the dose is adequate and is beneficial, whereas if the negative phases become more marked the dose must be lessened. It is obvious that an injection should never be given during a negative phase. Moreover, small doses are quite effective in starting the formation of protective substances and, doubtless, in the past far too large doses have been given. Professor WRIGHT now uses the new tuberculin (T.R.) of KOCH in quantities equal to $\frac{1}{100}$ th milligramme of dried powdered bacillary substance and never exceeds $\frac{1}{50}$ th milligramme.

A criticism of Professor WRIGHT's views by Mr. W. WATSON CHEYNE appeared in our columns shortly after the publication of the papers read at the Royal Medical and Chirurgical Society.³ Mr. WATSON CHEYNE, while recognising the originality and the brilliance of the work, regards many of Professor WRIGHT's contentions as theoretical and not proven, and deprecates any intemperance in applying the principles of inoculation to the exclusion of other well-tried methods, both surgical and hygienic, as likely to lead to disappointment and once again to cast discredit on tuberculin as a remedy. He thinks that other as yet incompletely elucidated factors in the production and spread of local bacterial diseases will have to be taken into consideration and that therefore an exaggeration of the importance of the opsonic factor in the protective mechanism may tend to hinder rather than to promote progress. The warning is a sound one. When the outcome of such inoculations is considered it is found that in localised tuberculous lesions satisfactory results have been obtained, especially when measures have been simultaneously adopted to increase the flow of lymph through the affected part. Examples of such localised lesions as lupus, tuberculous ulceration of subcutaneous tissues and bone, tuberculous glands, genito-urinary tuberculosis, tuberculosis of joints and of the peritoneum, and pulmonary tuberculosis without fever, have all exhibited benefit when so treated. On the other hand, in general infections the problems are much more complex and the fact that bacterial products are being spontaneously absorbed renders the administration of further bacterial substances a doubtful expedient. Professor WRIGHT suggests that before doing so we must prevent the auto-inoculations and thus endeavour to convert the infection into a localised one, and considers that for this purpose the

patient should be kept at rest in bed and the coagulability of the blood increased in order to lessen lymph flow and then later, when this is effected, carefully controlled and interspaced doses of vaccine should be administered. At present, however, it would seem that, at any rate as regards cases of pulmonary tuberculosis, the method is only likely to be of value in apyrexial cases in which the painstaking, laborious, and carefully recorded observations of Dr. LAWSON and Dr. STEWART point to a beneficial effect, for they found that the protective power of such cases in sanatoriums could be raised by inoculations to a higher level than is possible by sanatorium or climatic treatment alone, and in this their results coincide with those of TRUDEAU. There are difficulties in the way of any general adoption of the method, since the determination of the opsonic index requires considerable practice and makes large demands on the time of the investigator if any number of cases is concerned. Dr. LAWSON and Dr. STEWART endeavoured to find some more easily observed clinical manifestation of the negative phase but without success, so that at present the opsonic index is for most conditions indispensable. In a series of cases of tuberculosis of the urinary system, incorporated in a paper by Mr. J. G. PARDOE⁴ read at the same meeting of the Royal Medical and Chirurgical Society, the inoculations of tuberculin (T.R.) were given without determination of the opsonic index, as symptoms are quickly produced in these cases by overdosing which are easily recognisable. If some less laborious means of estimating the protective power and its variations can be discovered for other conditions the usefulness of the method will be greatly extended.

Stokes-Adams Disease due to a Lesion of the Auriculo-Ventricular Bundle of His.

FEW diseases offer such a field for the application of known physiological principles to pathological phenomena as that to which the name of Stokes-Adams disease has been applied. The striking character of its symptoms—slow pulse with syncope, apoplecticiform, or epilepticiform attacks, and the associated phenomena of Cheyne-Stokes breathing, angina pectoris, and cardiac arrest—combines to give it a peculiar interest. An excellent historical and critical survey of our knowledge of this disease by Professor W. OSLER was published in THE LANCET of August 22nd, 1903.

Recently in an annotation¹ we drew attention to some interesting experiments by Dr. JOSEPH ERLANGER on the phenomenon termed "heart block" by physiologists, which threw light on Stokes-Adams disease. In studying a case of the disease he found that the bradycardia was due to heart block. When the block was complete the auricles responded normally to influences exerted on the heart through its extrinsic nerves but the ventricles did not respond. This led Dr. ERLANGER to study heart block by experiments on a dog. He found that on clamping the limited region in which lies the

⁴ THE LANCET, Dec. 16th, 1905, p. 1766.
¹ THE LANCET, July 29th, 1906, p. 306.

only muscular connexion between the auricles and ventricles (the auriculo-ventricular bundle of His) the normal sequence of auricular and ventricular beats gave place to a partial block in which the beats of the auricles were to those of the ventricles as 2 to 1. On further clamping the ratio rose to 3 to 1 and this condition usually passed into one of complete block in which the auricles and ventricles beat independently. The analogies with Stokes-Adams disease are obvious and led Dr. ERLANGER to conclude that the lesion is in the same position in both conditions. In the *American Journal of the Medical Sciences* for December, 1905, Dr. ALFRED STENGEL has published an interesting confirmation of Dr. ERLANGER's conclusion—the first case in which a lesion of the auriculo-ventricular bundle of His has been recorded. A man, aged 57 years, was admitted into hospital on Sept. 19th, 1905. His illness began two and a half years before; while working he suddenly fell back and became unconscious for a few moments. He speedily recovered but three months later had another attack and then attacks followed at the rate of one in every two or three weeks. The patient was well nourished. The arteries were atheromatous and the pulse was 36 and of slightly increased tension. There was pulsation in the epigastrium and in the veins of the neck. The apex beat was strong and visible in the fifth space just outside the mid-clavicular line where a systolic thrill was felt. A harsh systolic murmur was heard at the apex and transmitted to the axilla. The urine did not contain albumin but there were a few hyaline and granular casts. Attacks occurred on the 23rd; they began with momentary pallor which was followed by flushing or cyanosis and slight tremor of the arms. After the attack the face was pale and the colour gradually returned. During several of the attacks the pulse stopped for a few seconds. After the attack the pulse-rate increased for a short time and then subsided to a steady rate of 16 to 18. The pulsation of the veins of the neck continued during the attacks at the same rate as between them—80 to 100 a minute. During the attacks there was only partial unconsciousness. The attacks became more severe and more frequent. During one, which occurred on the morning of the 27th, the pulse stopped for two minutes and ten seconds. In the afternoon the attacks ceased but Cheyne-Stokes respiration began. Three hours later death occurred. During the last few days of life there was apparently complete heart block. The auricular (venous) pulsations were from 80 to 140 per minute while the ventricular pulsations were from 18 to 26. The former rate was maintained even while the pulse ceased during the attacks. In the intervals the pulse was fairly regular and strong, the rate being from 18 to 30. The necropsy showed hypertrophy of the heart, especially of the left ventricle. The muscle was of normal appearance except a small area at the upper part of the interventricular septum. The root of the aorta and the orifices of the coronary arteries were atheromatous. The coronary arteries were thickened but nowhere calcareous or stenotic. On the anterior leaflet of the mitral valve was an atheromatous patch, sclerotic and white, which extended to the endocardium exactly over the bundle of His where the latter passes from auricle to ventricle. The bundle was involved in the disease, the exact extent of which cannot

be stated until the microscopical examination is completed.

The phenomenon of "heart-block" has long been known to physiologists—indeed, since the classical experiments of STANNIUS on the frog's heart—although their explanation as the consequence of interference with the normal conduction of the wave of contraction is more recent. The application of these results to the explanation of the clinical features of cases of cardiac disease has, however, been much neglected. The interesting paper by Dr. JOHN HAY, which we published in last week's issue, shows how strikingly valuable such a study of the known physiological properties of heart muscle may be when applied to the peculiar and varying conditions of a complex case of cardio-vascular disease. Dr. HAY'S ingenious and careful comparison of the radial and the jugular pulses suggests that a disturbance of rhythm may be caused at one time by a block in the conductivity of the heart muscle and at another by a disturbance in its excitability. The method is one which would seem to offer a useful field in its application to other cases of cardiac irregularity by affording valuable indications for treatment. In this connexion it is of interest to note that STOKES in one of his original cases noted the peculiar character of the jugular pulsation and also that it was more than double the rate of the ventricular beat.

Barmaids.

A PAMPHLET on the employment of "Women as Barmaids" seems likely, at the first glance, to excite attention chiefly by the absurdity of its title, as displayed by the manifest impossibility of employing "men" in this particular capacity, however much they might be available as barman, or, in transatlantic phraseology, as "bar-tenders." But a total absence of any sense of humour is not a new feature of philanthropy and does not of necessity detract from the value of its work. On this particular occasion the pamphlet, notwithstanding its title, really contains matter worthy of consideration; and, notwithstanding the well-understood objections to restrictive legislation in general, makes out a case for prohibition which at least requires a reply. There can be no doubt in the mind of any reasonable person that the vocation of a barmaid is attended by perils from which young women should, so far as possible, be sheltered. We have lately published articles on the public-house as a factor in the spread of disease, and it is manifest that the conditions favourable to the diffusion of tuberculosis which those articles described must operate with far greater intensity upon the attendants, who are constantly exposed to them, than upon the customers, who come and go. But, even apart from these conditions, the long hours of standing and the frequently excessive fatigue are productive of many uterine and digestive disorders and of feelings of malaise which are only too likely to lead to the alcoholic indulgence for which many opportunities are afforded; while the male frequenters of a drinking bar are often persons of loose conversation and degraded character, the worst possible companions for girls and the most likely to lead them astray. If we add to this the consideration that the

employment affords no prospects; that it uses up the majority of those engaged in it as soon as the first attractiveness of youth is past; that it is followed by a small proportion only of the great body of women workers; and that the inscription over the gate of the Inferno is not inappropriate to it in relation to the difficulty of turning away to better forms of industry, we shall have stated a very strong case against the usages which permit young women thus to be occupied. It appears to be true that "learning the bar" has no tendency to render a woman a better wife or mother, that it affords her no security of employment after about the age of 30, that it renders her unacceptable to employers of almost every other kind, that it often permanently injures her health, and that it exposes her to exceptional risks of seduction and of intemperance, with the consequences, both to herself and to her offspring, which these conditions may entail. If this be so, we may well ask ourselves whether it is consistent with a due regard to the national welfare to allow the daughters of the Empire to be offered up as sacrifices to the Moloch of the drink traffic, or, as too often happens, to be employed as decoys for the purpose of adding to the intemperance by which the country is at once weakened and disgraced. The demand for the most perfect individual liberty compatible with the general welfare is a right and reasonable one; but it is not either right or reasonable that this liberty should extend so far as to allow young women, the majority of them of exceptionally good physique and appearance, and the best calculated among their contemporaries to be the mothers of healthy and vigorous children, to engage in an avocation which is not only likely to be highly injurious to themselves but which is almost certain to prevent the full discharge of their duties to the community.

It may perhaps be fairly questioned by any who are acquainted with the conditions of industrial life to-day and with the nature of the industrial and moral training commonly afforded either by the schools of the period or by the majority of working-class mothers, whether the girls and women who are growing up around us might not profitably be subjected to a larger measure of supervision than is ordinarily extended to them. On every side it is manifest that the great desire of the working-class girl is to be "independent" of home or of every other control, while at the same time there has usually been but little preparation in her past to enable her to exert her independence for her own permanent advantage. Domestic service with a careful mistress, usually at once the best protection for the inexperience of youth and the best possible preparation for the duties of wifehood and maternity, is falling more and more into disfavour with the classes for whom it was once almost the sole means of remunerative employment, and, where it is still adopted, is to a large extent regarded on both sides as a mere contract for work and wages, involving no reciprocity of duty beyond the performance of the former and the payment of the latter. The modern very considerable development in London and large provincial towns of ladies' clubs, of tea-rooms, and of such-like establishments, in which waitresses are only required during certain portions of the day, has greatly tended to encourage discontent with ordinary

household duties and with the restraints inseparable from them, and although the openings of the new kind are not yet sufficiently numerous to affect materially the great mass of female labour, they are undoubtedly sufficient to occasion general discontent with all positions in which similar restraints are unavoidable. It would seem to dispassionate observers that in these social matters, as well as in regard to many public questions, the members of the working classes, of both sexes, have been placed in positions of greater liberty and greater independence than they are at present qualified to fill with advantage either to themselves or to the community, and that we may possibly have to pay a heavy national reckoning for their mistakes. If we should be spared this reckoning, our people may be expected by-and-by to have learned from experience sufficiently to arrive at some better adjustment of themselves to their environment than is now commonly effected. In the meanwhile, it is certainly legitimate to take advantage of all favourable currents of popular opinion, and, even at the expense of some curtailment of personal liberty, to protect classes who have displayed very little capability of protecting themselves. A measure forbidding the employment of young single women in bars where intoxicating drinks are sold, unless they had been actually so employed before its enactment, would at once give greatly increased security to barmaids now in possession and would close the door to many abuses of a manifestly flagrant character.

In a matter of this kind, as in relation to most other social questions, it might often be in the power of members of the medical profession very usefully to influence public opinion. It can be no matter for surprise if a silly girl, ignorant of the dangers she is incurring, likes to accept an employment of which she only knows that she will be expected to wear becoming dresses, to look her best, and to talk to people whom she would describe as "gentlemen." Her mother will know nothing of the probable effect of long hours of standing upon her health and will be likely enough to entertain and to encourage matrimonial hopes with regard to some of the "gentlemen" in question. The medical practitioner who has perhaps brought the girl into the world, and has seen her through the ailments of her childhood, if he has preserved the friendly and confidential relations with her family which it is always well to establish with patients, however humble they may be, might often be able to hold her back from a course only too likely to end in her destruction; and his advice, acting upon the class to which she belongs, might become a potent influence in reconciling them to the complete exclusion of their daughters from a form of occupation calculated to be detrimental alike to their physique and to their morality.

Annotations.

"No quid nimis."

MOTOR-CARS AND INCOME-TAX RETURNS.

A CORRESPONDENT raises the important question as to whether, in making a return for income-tax purposes, the cost of his motor-car, which he uses solely for professional purposes, should be charged to capital account with a depreciation each year or to profit and loss account—thus, in the latter case, treating the motor-car as a "trade

utensil." There can be no question of the advantage to the owner of the car in charging it up right away to profit and loss account and thus doing away with the necessity of calculating an adequate depreciation; but the local surveyor of taxes is not likely to agree to this course: he will insist on its being charged to capital account. With such a delicate piece of machinery as a motor car, the working life of which cannot be averaged at more than three years if used in daily practice, it is a serious matter to place its cost to capital account unless a substantial depreciation is claimed and allowed for it. At the end of three years a car originally costing, say, £300 will not fetch more than £70 or £80, showing an annual depreciation of something like 25 per cent. How many surveyors would agree to such a depreciation? The surveyor of the district in which our correspondent resides requires that his car should be charged to capital account and a 10 per cent. depreciation be charged for it—an obviously absurd amount considering its rapid depreciation. Of course, all the cost of upkeep, including chauffeur's wages, petrol, oil, recharging accumulators, repairs, renewals, insurance, garage charges, and so on, would legitimately be charged to profit and loss account, and on this point there is no difference of opinion; but it is certainly desirable that some general and equitable agreement should be arrived at between owners and surveyors on the particular point to which our correspondent alludes. In view of the importance of the subject we invited four of the leading associations dealing with income-tax to express their opinion upon the matter, and they kindly replied as follows:—

1. The motor car is certainly capital expenditure; your correspondent cannot charge it up in a lump sum against the expenditure of the year. He should have a depreciation upon it, and this depreciation can be charged up year by year, and eventually, when the car is worn out, he need charge up to capital only the excess paid for the new car over the value of the old car, as shown in his accounts, the rest being charged to profit and loss.

2. The actual cost of the motor-car should be charged to capital account.

3. The cost of the motor-car must be charged to capital account.

4. It would be to the disadvantage of your correspondent to charge the cost of a motor-car used entirely for professional purposes to capital account with, say, 10 per cent. depreciation and even considerably more. Our opinion of the correct way is to spread the cost over, at most, five years and charge besides repairs but not depreciation.

It will thus be noted that the first three opinions leave no room for doubt as to the course to be pursued. The last one would certainly seem to suggest that no hard-and-fast rule has as yet been laid down; but we doubt whether any surveyor will be found who will permit the course suggested to be carried out. The matter might with advantage be discussed and the exchange of opinions and experiences would undoubtedly prove useful.

WOOD AS HUMAN FOOD.

THERE is really no reason why, if the necessity arises, wood should not be employed as a source of food since it consists chiefly of cellular fibre which, on suitable chemical treatment, may be converted into sugar. But directly wood can have no value as a food for the human organism, as a correspondent in the *Times* has declared, inasmuch as the digestive juices are not able to deal with it. A certain amount of woody fibre is, we believe, digested by the horse by reason of the presence of a peculiar digestive enzyme in that particular animal's digestive canal which is capable of converting cellular tissue into sugar. The correspondent just referred to would appear to be in the possession of a similar peculiarity, for he writes the following (from a workhouse in Mile End Old Town): "Working in the firewood department I have discovered that common deal wood is a valuable food and medicine if cut small and eaten. Brown bread is not in it for its tonic and invigorating effect." The writer, of course, may mean this as a joke at the expense of the advocates of the brown loaf or of the administrative department of the workhouse. Chemistry,

at any rate, throws no light on either a "tonic" or an "invigorating effect" which could be fairly ascribed to the constituents of wood, for they consist almost entirely of fibre which is highly indigestible and which yields absolutely nothing of nutritious value to the action, powerful though it be, of the human gastric juices. As we have said, however, wood on long treatment with acid is eventually transformed into sugar which, of course, is a valuable food of its class. In the same way our worn-out shirts and collars could be converted into food, and possibly if this gentleman were to substitute a white shirt for his "common deal wood" the results would compare favourably with even white bread. His idiosyncrasy is, we believe, rare.

CHILDREN WHO ARE SPEECHLESS BUT HAVE HEARING.

MUCH care has of late years been bestowed upon the training of children defective mentally or otherwise. There is, however, a considerable class whose education is often neglected. We refer to children who have power of hearing—i.e., whose action can be controlled by spoken words, though they neither speak themselves nor make any response in words. A child may hear music and hum the tune or repeat it; he may go upstairs and find something when told to and yet remain speechless. These cases vary; usually examination shows no defect in the size and form of the head or development of the features but there is a lack of the normal brain spontaneity that can be coördinated in imitation of movements made by a teacher and such action as occurs is inexact, with a corresponding want of imitation of the movements produced in the face during articulation. The result is that speech remains absent from want of training of the necessary movements of the lips and tongue: the child will sometimes sing though he will not articulate. All that the children need is training in imitative faculty with daily practice in oral teaching, such as is almost universally used with deaf children. In public elementary schools there is often great difficulty in providing proper teaching for these speechless children who have hearing. The Elementary Education (Blind and Deaf Children) Act, 1893, is compulsory both upon the educational authorities and parents but the speechless children who have hearing do not come under its provisions and as the Education (Defective and Epileptic Children) Act, 1899, gives power to the authorities "to determine what children are defective," there is often a great difficulty in providing the special form of training needed by the children to whom we have referred. This suggests the desirability of amending and consolidating those Acts.

THE TEACHING OF HYGIENE AND PUBLIC HEALTH IN IRELAND.

THE provisions for the teaching of public health in Ireland are far from being what they should be. The greater portion of the work of a medical officer of health in Ireland is carried on by the dispensary medical officers who are apparently *ex-officio* medical officers of health of their respective dispensary districts. Most of these gentlemen are qualified in respect of their having obtained the diploma of the Conjoint Board of the Royal Colleges of Physicians and Surgeons in Ireland. These bodies apparently do not insist upon their students attending a course of lectures upon public health, for this important subject is combined with that of forensic medicine as one group in the third professional examination, and any student entering for this examination must send in a certificate of attendance for three months at lectures upon these two subjects. In these circumstances most of the course may be given up to forensic medicine, when all the attention that

public health will receive is a few lectures at the end of the course. The consequence is that many dispensary medical officers become *ex officio* medical officers of health without having had adequate training. On the other hand, the Royal University of Ireland requires its students to attend a course of 30 lectures in hygiene. Moreover, by a recently passed regulation, the students of Maynooth, who supply most, if not all, of the Roman Catholic secular clergy in Ireland, attend lectures in hygiene, and so, too, do the nurses belonging or affiliated to Queen Victoria's Jubilee Nursing Institute. Thus in a way the future medical officers of health may receive less instruction, so far as attending lectures goes, in the subject of hygiene than the parish priest or the district nurse who may work with them in their particular district. We are quite aware of the fact that public health and hygiene cannot be learned entirely by attendance at lectures on these subjects, but the fact remains that if lectures are given and if medical students have to attend them the teaching gives such students a sound foundation upon which to build further knowledge. The main facts of hygiene should be more appreciated than they are by the public, although we admit that in this direction popular attention is being aroused. A course of lectures upon sanitary matters has recently been given in the Royal College of Science, Dublin, the audiences being large. Such education of the people is all for good, for in many instances, although the medical officer of health may be energetic and well informed, his efforts for reform are entirely neutralised by the ignorance of the populace with whom, through their elected representatives, he has to deal.

PALUDISM IN ANNAM.

Dr. Vassal has written in an interesting manner on his researches into the etiology of malarial fever in French Indo-China. His paper, entitled "Une Mission à Lang-Bian," appears in *L'Europe Coloniale*. The first interesting point which he establishes is that paludism does not respect high altitudes. "The sanatorium of Cilao at Réunion," writes Dr. Vassal, "though built at 1215 metres above sea level and enjoying an exceptionally good climate, suffered from an invasion of the endemic marsh fever." Dr. Laveran's investigations in 1880 having established the fact that the malady is caused by the bite of anopheles, a species of mosquito which introduces hæmatozoa into the blood, Dr. Vassal confirms this fact by declaring that "alone among all mosquitoes the anophelines contract and propagate malarial infection. Where there are no anopheles," he says, "there is no paludism." A proper diagnosis, he maintains, can only be made by the microscope. But the natives of Annam show the greatest repugnance to yield up a single drop of their blood for examination—under the influence probably of some deep-seated superstition. As it happens sometimes, too, that the hæmatozoon is not to be met with in the peripheral circulation, the observer is constrained to direct his attention to the state of the spleen, as the protozoon causes congestion and inflammation of this organ as well as of the liver and bladder. Splenic hypertrophy in the case of children is so noteworthy a symptom that Koch has already called attention to the percentage of children thus affected as an easily established "endemic index" of the malady. In his quest after samples of Annamite children's blood Dr. Vassal seems to have been regarded as a regular "bogey-man" in the district. "For this reason," he writes, "the village of Kim-nom would not allow me to examine the children and the villages of Dang-kia and M'loné refused to be vaccinated," for I made a point of rendering what service I could to these forlorn people in the course of my researches. . . . Whenever I draw near the

Men women and children would shut themselves up in their houses. At last the master of the house would venture out, followed perhaps by a few young men, and while my instruments were in process of boiling my distributions of pearls and tobacco would begin to take effect. Little by little the doors of the huts would open and the children would be brought out by their mothers. Each child always received a certain number of pearls . . . and while I vaccinated I was on the look out for paludic symptoms. The research was pursued under cover of the vaccination and when I came across a sympathetic subject I would manage to get a drop of blood. . . . I found two types of malarial fever—the malignant tropical tertian and tertian fever in the strict sense. At the period of observation (July and August) the rains had commenced and the rice fields were flooded—without doubt a favourable period." The prevalence of the disease, as ascertained by Dr. Vassal, is astonishing, 84 per cent. of the natives being affected. At a place eight kilometres from Drau he examined 16 natives and found that all were affected. Here, he says, "the example of one family may be cited. The father had an enormous splenic tumour. One child was rickety, and seemed to have the 'abdomen of a batrachian,' so swollen out was it by his spleen. The mother was enceinte, and so menaced by the fever that the worst results were to be anticipated. Another wife had died with her child a few days after confinement, owing to an attack of fever." A last point of interest raised by Dr. Vassal is the question of clothing. "In the hygienic conditions," he writes, "in which the Annamites of Lang-bian live, relapse becomes inevitable, and cold is perhaps the cause which brings the fever back most easily. The Lang-bian Annamite has nothing to protect him from the cold. His clothing and his dwelling are the same as in the plain. His food becomes insufficient; he has no fresh fish. . . . Rice and salt fish cost ten times what they are worth. An Annamite can only live at Lang-bian by wearing warm clothes and changing his food and method of living, just as an Annamite dresses and lives like a European when he removes to the metropolis."

ARTERITIS IN CONNEXION WITH TYPHOID FEVER.

ARTERITIS is a well-recognised but rare complication of typhoid fever. In few of the recorded cases has a complete anatomical and bacteriological examination of the lesion been made. Hence the importance of the following case which was reported at the meeting of the Société Médicale des Hôpitaux de Paris on Dec. 1st, 1905, by M. E. Rist and M. L. Ribadeau-Dumas. A girl, aged seven years, was admitted into hospital on Feb. 24th, 1904, the eighth day of an attack of typhoid fever, in a state of great prostration. The temperature was 105.4° F. and the pulse was 90 and dicrotic. Vidal's reaction was obtained. On the 27th rose spots were observed. The case ran an ordinary course and the temperature fell by lysis, attaining 100° F. on March 9th. But after this deferescence was arrested and the temperature ranged from 100° to 100.4° until March 14th. On the 15th the temperature suddenly rose, reaching 104° in the morning and 105.8° in the evening, and the patient complained of severe pain in the right leg. Examination showed some pallor of the toes. The course of the femoral artery was tender and the pulsations of the popliteal artery were less distinct than on the other side. On the following days arterial pulsation was completely absent in the right thigh and leg. The limb was pale and the great toe was beginning to shrivel. On the 21st all the toes were mummified. On the 23rd a large bulla filled with sanguineous serum appeared on the upper third of the leg. Below this the skin was gray and softened. The toes were dry, violaceous, and of wooden hardness. Bullæ appeared on

the upper part of the leg, indicating the line of demarcation. The patient suffered from intolerable pain and amputation was performed on April 1st. It was necessary to amputate in the upper third of the thigh in consequence of the impermeability of the arteries. Recovery was uneventful. At the operation the femoral artery was obliterated at the point where it was divided. In the upper part, corresponding to the middle third of the thigh, the artery formed a hard rounded cord. Lower it became irregular and had a moniliform appearance. In the popliteal space the artery was enlarged and flattened and its contents were softened. These changes were also found in the tibial and peroneal arteries and in their branches. Two abscesses were found in the muscles—one of the size of a walnut in the adductor magnus and the other, of the size of a hazel nut, in the vastus internus. Around the abscesses the muscles had a greyish tinge. Microscopic examination showed only slight change in the upper part of the femoral artery. There were some collections of leucocytes in the adventitia and the endothelium was a little thickened. The vessel was occluded by a fibrinous clot. The popliteal artery was much more altered. It contained pure pus and its walls were in process of destruction. The internal coat had completely disappeared, the middle coat was infiltrated with polynuclear leucocytes, and the adventitia was replaced by a mass of leucocytes, traversed in places by fibres of connective tissue. At a higher level the changes in the artery were less intense and it contained fibrinous clot. Still higher there was only endarteritis. In the contents of the femoral artery and in the pus of the muscular abscesses the typhoid bacillus was found in pure culture. Thus the bacillus was the cause of the obliterative arteritis.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE lectures of the present year to be delivered before the Royal College of Physicians of London, Pall Mall East, S.W., are as follows.—The Milroy lectures will be given by Dr. W. H. Hamer on March 1st, 6th, and 8th, the subject being *Epidemic Disease in England—the Evidence of Variability and of Persistency of Type*; the Goulstonian lectures will be given by Dr. H. Batty Shaw on March 13th, 15th, and 20th, the subject being *Auto-intoxication*; the Lumleian lectures will be given by Dr. D. Ferrier on March 22nd, 27th, and 29th, the lectures being on *Tabes Dorsalis*; and the Oliver-Sharpey lectures will be given by Dr. E. I. Spriggs on April 3rd and 5th, the subject being the *Bearing of Metabolism Experiments upon the Treatment of Some Diseases*. The days of the week for the delivery of the lectures are Tuesdays and Thursdays and the hour of delivery is 5 p.m.

PARISH MEDICAL OFFICERS IN AUSTRIA.

THE Vienna correspondent of the *Standard*, in the issue of that journal of Jan. 20th, gives a grim account of the position of parish medical men in Austria. The total number of these officials in Lower Austria is, he says, 450. Of these, only 340 are able to keep themselves respectably. Only 170 can educate their children and 145 can only live by taking extra work themselves or by their wives doing the same thing. That is to say, the medical men act as wine merchants on commission or take some similar post and their wives do needlework or act as post-mistresses or managers of shops. More than half the medical men in question are compelled to send their children out to work. The average salary is about £25 per annum and although some get more yet others get less. The fee for vaccination is 2d., which includes the vaccination, filling up two certificates, and attendance for eight days. The correspondent continues: "For death certificates he does not get even the English shilling nor for

the notification of infectious diseases."....." There is, of course, no such thing in England as a fee for filling up a death certificate and the correspondent has evidently confused the shilling paid to the medical officer of a public institution for notifying a case of infectious disease. However, the Austrian medical men are going to strike and the communal authorities are said to have replied that if the medical men will no longer vaccinate there are plenty of quacks who will. This is a foolish argument, but no more foolish than kindred arguments put forth by antivaccinationists in this land. It is for the interests of a community to see that its medical men are paid a salary which will not only enable them to live but which will also enable them to devote their best energies to the task of guarding the health of their fellows against the inroads of disease.

WHAT IS DISTILLED WATER?

FOR the purposes of the Sale of Food and Drugs Act distilled water has been held to be a drug, and odd as this definition may appear to be it would after all be difficult to find any more suitable appellation. Distilled water is practically a chemists' commodity, may even form, and has formed, the sole item in a medical prescription, and it is 'an official preparation of, and is defined in, the British Pharmacopœia. This last fact implies its use as a drug in medicine. In the proceedings taken at Marylebone police court against a druggist, the defendant "was summoned for selling to the prejudice of the purchaser a drug—namely, a pint of distilled water—which was not of the nature, substance, or quality of the drug demanded." Sir Thomas Stevenson stated that he had analysed a sample of the water and had found it to be very dirty and full of mouldy growths and that it gave an appreciable deposit. The British Pharmacopœia requires distilled water to be colourless, tasteless, and odourless and when evaporated it should leave "at most a scarcely visible residue." Clearly the sample in question did not conform to these requirements and, legally speaking, any substance defined in the Pharmacopœia is a drug. The defence was that it was assumed that the water was required for photographic purposes but no question on this point was asked at the time the purchase was being made. The defence was hardly justifiable since it is essential in photographic processes to employ distilled water and it is hardly likely that photographers would incur the expense of procuring distilled water if ordinary tap water would answer the same purpose equally well. The defendant was fined 10s. with £3 3s. costs, the magistrate remarking that it was not suggested that he had done anything fraudulent or that reflected on his character.

THROMBOSIS OF THE RECEPTACULUM CHYLI AND CHYLOUS ASCITES IN CIRRHOSIS OF THE LIVER.

IN the *Medical News* (New York) of Nov. 11th, 1905, Dr. H. J. Nichols has reported a case of cirrhosis of the liver complicated with thrombosis of the receptaculum chyli and chylous ascites. Cases have been recorded of thrombosis of the thoracic duct near its junction with the subclavian and jugular veins but not of thrombosis at a lower level. The patient was a man, aged 74 years, addicted to alcohol. He was admitted to hospital on March 18th, 1905. The abdomen was distended and tympanitic and covered with a network of enlarged veins which extended to the lower part of the chest. In these the blood flowed from below upwards. At the bases of the lungs resonance was impaired and a few liquid râles were heard. The heart was slightly enlarged to the left and a mitral systolic murmur was heard. The legs

were œdematous. The liver dulness extended in the nipple line from the fourth to the seventh ribs. There was some dulness in the flanks. Incisions were made in the legs and saline purgatives and infusion of digitalis were given without relief. The legs became more distended and the abdomen more swollen, with marked dulness in the flanks, fluctuation, and dyspnoea. On March 28th paracentesis was performed and yielded 5700 cubic centimetres of fluid. The abdomen became lax and the œdema disappeared. The fluid re-accumulated. On April 6th 6200 cubic centimetres were removed and on the 16th 7800. On each occasion the fluid presented the same striking appearance. It was milky white, with a tinge of pink. On standing the pink colour disappeared and a red deposit formed. The fluid contained 1 per cent. of albumin and 1.3 per cent. of fat. Microscopic examination showed no large fat globules but a number of fine granules in constant motion. There were 24,000 erythrocytes and 1800 leucocytes per cubic centimetre. The latter consisted of small lymphocytes, 66.5 per cent.; large lymphocytes and transitionals, 13.5 per cent.; and polymorphonuclears, 20 per cent. The patient became comatose and died on April 26th. A necropsy was made. The abdomen contained about 2800 cubic centimetres of pink fluid similar to that removed during life. There was a typical hobnail liver which weighed 1400 grammes. The receptaculum chyli and thoracic duct were occluded by a firm, fibrous clot. The mitral valves were thickened and insufficient. Very few cases of chylous ascites associated with cirrhosis of the liver have been recorded. The nature of the connexion between these conditions is not clear.

POISONING BY OLEANDER.

IN THE LANCET of Dec. 30th, 1905, p. 1894, Dr. F. Lucas Benham referred to the poisonous nature of oleander and desired information as to what instances of poisoning by that shrub are known. In the event of no records of its toxic effect being forthcoming there is direct and corroborative evidence sufficient to suggest the symptoms to be expected in cases of poisoning by oleander. It has been shown by M. Dubigadoux and M. Durieu¹ that the branches of the Algerian oleander yield on incision a poisonous, milky juice, from which can be isolated a substance chemically and physiologically identical with strophanthin, the glucoside to which strophanthin owes its activity. The generic name of oleander is *Nerium* and it belongs, as does strophanthus, to the natural order Apocynaceæ or the periwinkle family. To the same order belongs the ouabalo tree, the wood of which yields the glucoside ouabain, resembling strophanthin in its chemical constitution and physiological action but being much more toxic. Apocynum or Canadian hemp, another member of this family, contains two active principles which act as cardiac tonics in a similar way to digitalis. Another member of the family, the white quebracho, is exceedingly active, affecting and, finally, paralysing the respiration, central nervous system, and heart. It is evident that the well-known members of the family to which oleander belongs have a powerful action on the heart. Digitalis itself, the best known of the cardiac tonics, is a member of a closely allied family, the scrophulariaceæ. It is probable, therefore, that oleander also exerts an action on the heart. It does not necessarily follow that the plant is equally active when grown in other countries—e.g., in South Australia. It is well known that drugs vary enormously in respect of their active principles and potency according to the climate and soil in which they grow. Digitalis affords a good example of this. It has been shown by M. François Franck² that from 0.2 to 1.0 gramme of the leaves

collected in one part of France, the Vosges, produces a marked physiological effect, whereas in other parts as much as from four to eight grammes are given, while in Roumania so large a dose as from 12 to 15 grammes of the powdered leaves has been given without producing toxic effects. According to Allen³ the leaves of oleander contain two glucosides, oleandrin and nerin, having physiological effects closely analogous to those exhibited by digitalis. Oleandrin is alleged to have basic properties, though it is free from nitrogen, while nerin is not improbably identical with digitalein.

A REDUCTIO AD ABSURDUM OF THE PHARMACY ACT.

THE announcement was recently made in the *Financial Times* that a company had been registered to acquire a druggist's business at Newmarket with a unique directorate. Of the seven gentlemen holding the position of director five are professionally connected with horse-racing; they are A. D. Sadler, S. Loates, and G. Chaloner, trainers of race-horses; G. H. Martin, jockey; and E. Moore, turf commission agent; the remaining two directors being an auctioneer and a butcher. It is noteworthy that the board of directors is singularly lacking in members possessed of even a nodding acquaintance with pharmacy and the allied sciences. The situation of these gentlemen is decidedly Gilbertian. Are we to think that they have been chosen with a view of bringing their special knowledge to bear on any branch, however remote it might be, of the art of pharmacy. The *Financial Times* ironically suggests that this may be an application of the joint-stock principle to the medical treatment of horses and that the butcher and auctioneer may come in useful after the other "druggists" have had their innings. It emphasises an anomaly in the Pharmacy Act of 1868, whereby it is possible for limited companies of unqualified persons to practise as druggists and to use the title of druggist. The only safeguard to the public consists in the fact that the assistants employed in the shops of such companies must possess a pharmaceutical qualification in order to sell or to dispense scheduled poisons.

THE STRAITS SETTLEMENTS POISON ORDINANCE, 1905.

COLONIAL legislators frequently have the advantage over those who make laws for the mother country in that they do not always have to consider old-established customs or vested interests. In the *Pharmaceutical Journal* of Jan. 6th are given to the new rules made by the Governor in Council under Section 13 of the Straits Settlements Poison Ordinance, 1905, which afford a case in point. They include several wise restrictions which are not imperative in this country. The new Ordinance contains Schedule A, Parts I. and II., almost similar to Schedule A of the Pharmacy Act, 1868, and the same precautions have to be observed in the retail sale of poisons in both parts of the schedule as obtain in this country. It is noteworthy that sulphonal is included in Part I. In addition the rules provide that no poison shall be sold to any person under 18 years of age. Licences to sell by retail the several poisons named and described in Schedule A shall be issued only to such persons as are duly registered as licensed chemists and druggists under the Morphine Ordinance (XIV. of 1905). Schedule B is a new and commendable feature of the Ordinance. It includes several poisons which can only be sold wholesale by such persons as may be granted a wholesale licence under the provisions of the Ordinance. The quantities shown opposite each poison in Schedule B shall be deemed the minimum amount constituting a wholesale transaction.

¹ Journal de Pharmacie et de Chimie, 1893, p. 433.
² Archives de Physiologie, 1891 and 1892.

³ Commercial Organic Analysis, vol. iii., part 3, p. 137.

Records of the sale of such poisons must be kept in the form prescribed by the rules. It shall be lawful for any police officer not below the rank of inspector, and for the licensing officer under the Ordinance in each settlement, and for any officer of the medical department authorised in writing by the licensing officer, at all reasonable times to inspect the books kept under these rules and to take copies and extracts therefrom. The poisons under Schedule B, with the quantities named, are: arsenic and all preparations of arsenic, 5 lb.; mercury and all its preparations, except cinnabar, 1 lb.; lead acetate, 1 lb.; antimony and all its preparations except the sulphide, 1 lb.; carbolic acid, 5 gallons; phosphorus, 1 lb.; cyanide of potassium and all other metallic cyanides, 5 lb.; oxalic acid and all other oxalates, 5 lb.; and patent medicines containing any of the poisons enumerated in Schedule A, Parts I. and II., except those containing opium or morphine, as defined in Ordinance IX. of 1904 and Ordinance XIV. of 1904 respectively, 1 original packet. In addition it is provided that the following poisonous chemicals used in photography, if sold in original packets of one ounce or over, will be deemed wholesale within the meaning of this Ordinance: ferrocyanide of potassium, iodide of mercury, perchloride of mercury, oxalate of ammonium and potassium, sulphocyanide of ammonium, ferrocyanide of copper, and lead acetate.

WHAT IS WHISKY?

A FURTHER stage was reached in the whisky case at the North London police court last Monday, when the principal witness was Professor Sir James Dewar. Questioned as to his view of the meaning of the word whisky Sir James Dewar, speaking as a chemist, said it was a generic name given to several varieties of ardent spirit prepared in Ireland and Scotland from a distillation of a fermented infusion of grain technically called "wash." Whether the distillation was conducted in a patent or a pot still did not affect, in his opinion, this definition; both stills could be made to produce similar results. The pot-still whisky was the dearer of the two because it could not be produced so economically as the patent still, in which the process was more expeditiously done. He did not agree with the statement in the certificate of the borough analyst that whisky should contain 380 parts of secondary products per 100,000 parts of absolute alcohol present. The average, he thought, would be 240, though 100 would be very low and could scarcely be called whisky. In answer to a question put by the magistrate Sir James Dewar said that if pot-still whisky were sent to London and mixed with patent-still spirit it would not be Scotch whisky. Mr. Tatlock, the public analyst for Glasgow, re-called, said that pot-still whisky was unwholesome until matured by age, whilst patent-still spirit was "beautifully light," which drew from the magistrate the suggestion that there would be no harm in stating upon the bottle the words that "this whisky was composed one-third of nasty pot-still spirit and two-thirds of beautiful patent-still spirit." The witness was understood to assent to this but with the adjectives "nasty" and "beautiful" deleted. The hearing was again adjourned.

HERNIA OF MECKEL'S DIVERTICULUM.

It is rare to find the vermiform appendix in a hernial sac and yet the appendix is normally present in the body and is placed close to both the internal abdominal ring and the crural ring. It is still more rare to find Meckel's diverticulum in the sac of a hernia and this is what we should expect, for the diverticulum occurs in only about 2 per cent. of all bodies examined and therefore the probability of its appearance in a hernia is 50 times less than is the case with a vermiform appendix, even without taking into account the fact that the diverticulum is as a rule not very near to the usual sites of hernial protrusions. This form of hernia was

first described by Littre more than 200 years ago, in 1700, and has been called Littre's hernia, but much confusion has been caused by partial enterocele having also been named Littre's hernia; and, indeed, there is reason for thinking that Littre was the first to describe this condition also, though from the clearer description of a partial enterocele which was given by Richter in 1779 Richter's name is deservedly applied to the latter. In spite of its great rarity cases of Littre's hernia or hernia of Meckel's diverticulum have been recorded from time to time. Even when only the diverticulum is included in the sac and strangulation occurs, all the ordinary symptoms of strangulated hernia may be present and yet there is no actual obstruction to the onflow of the intestinal contents. Until recently this form of hernia was only seen in cases of strangulation. In the present issue of THE LANCET we publish an account of a case of Littre's hernia, recorded by Mr. C. B. Howse, and in this the variety of hernia was recognised during the operation for radical cure. Now that the operations on non-strangulated herniæ are common we may expect to find more cases of Littre's hernia.

THE medical officer of health of the Cape Colony states that for the week ending Dec. 22rd, 1905, the condition of the colony as regards plague was as follows. No case of plague in man or in other animal was discovered throughout the colony except at Port Elizabeth, where out of 307 rodents bacteriologically examined two mice proved to be infected by plague. As regards the Mauritius a telegram from the Governor received at the Colonial Office on Jan. 18th states that for the week ending Jan. 18th there was 1 case of plague and 1 death from the disease.

THE committee of the Fifteenth International Congress of Medicine to be held at Lisbon has decided to postpone the date by which all scientific communications must be sent in until March 15th. The papers, together with a résumé of their contents in French, English, or German, should be addressed to the general secretary of the Congress, Professor Miguel Bombarda, New School of Medicine, Lisbon.

A SERIES of 12 lectures will be delivered by Dr. Francis Warner under the auspices of the National Association for the Feeble-Minded at Denison House, Vauxhall Bridge-road, London, S.W., beginning on Monday, Jan. 29th, at 6 P.M. The lectures are in connexion with the extension lectures of the University of London.

THE annual general meeting of the Neurological Society of the United Kingdom will be held at 11, Chandos-street, Cavendish-square, London, W., on Thursday next, Feb. 1st, at 8.30 P.M. Mr. W. Bateson, F.R.S., will read a paper on Mendelian Heredity and its Application to Man.

A WORKING COLONY FOR FEEBLE-MINDED CHILDREN.—At a meeting of the Metropolitan Asylums Board on Jan. 20th a letter was read from the Local Government Board assenting to the proposals of the managers (1) to use the Bridge School, Witham, Essex, as a working colony for male feeble-minded cases, when that institution is no longer required for ringworm cases; and (2) to the transfer on medical advice of children from the London homes for feeble-minded to the working colony before such children attain the age of 16 years on the understanding that no such transfers will be made until such additional accommodation for feeble-minded cases has been provided. The Board stated that it assented to the second proposal provided that only cases were sent which are either unlikely to improve any more in subjects taught at the special schools of the London County Council or to improve so little as to make their retention in the ordinary homes no longer advantageous, and further, that suitable classification of the children removed according to sex and age and apart from adults was carefully attended to.

THE NOSE IN LITERATURE.

BY P. TETENS HALD, M.D.,

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KOMMUNE HOSPITAL, COPENHAGEN.

It is partly in order to draw attention to the writings of an English colleague, dead these many years, that I venture to lay the following lines before the medical public. By chance I picked up some time ago a book, now, as I suppose, only little known, the "Illustrations of Sterne," by John Ferriar, M.D. He evidently was, as so many of the profession have been, a hunter of curiosities and as I have worked a little in the nose and throat line his collection of quaint quotations concerning the nose appealed very much to me. Once my interest being stirred I made further researches in the same direction, some of which are reproduced in the following lines. I hope the reader will not find them too tedious.

Perhaps there has never existed a man who has written of the nose in more laudatory terms than the Bologna surgeon Tagliacozzi. In his "Chirurgia nova," where he describes the Italian rhinoplastic operation, is to be found a very entertaining chapter with the heading, "De narium dignitate," in which he expresses himself in the following manner: "Nares igitur, ut earum dignitatem consideremus, quantum pulchritudini splendoris afferant, id satis explicari non potest. Quanvis enim cuique faciei partium suus honor, sua gratia adeit, quae suavi rythmo disposita, in augustissimam formae speciem conspiciunt, peculiaris tamen nasi ratio est, ut concinnus si fuerit, summopere faciem commendat; distortus vero, aut pravus aut simus aut vulnere notatus totam formae honestatem evertat." And in another place: "Inest praeterea naso nescio quid angustum et regium; an quia forma corporis et animae decoris index sit: an quia peculiaris quaedam imperandi dexteritas et prudentia in eo eniteat."

In order to show how essential the nose is in making a figure beautiful or ugly Tagliacozzi brings forth the two following historical incidents. In the first a somewhat uncoquy part is played by a Byzantine courtier, "qui ab ipse ab Roberto filio Petri Antisiodoriensis nares sponsae praecidit, ut qua causa allectus fuerat Robertus ad sponsam raptam, eadem spoliatus graves aculos doloris persentisceret." This really appears to have occurred, though the quaint stating of the motive must be answered for by Tagliacozzi himself alone.¹ About the historical truth of the next narrative, however, I feel happy to be able to entertain some doubt, as otherwise it would form a rather heavy item on the bill run up in former times in England by some of my ancestors. "Sic sancta Eba, regii sanguinis Angla, Colymbaniensis monasterii praeses, ut funestam irruentium Danorum libidinem a corpore suo averteret, una cum ceteris religiosae illius vitae comitibus nares sibi obtruncavit, quo vulnere, non tam indecoro quam honesto, castitatem Deo promissam casta foemina redemit."² Modern historians at least³ refuse to believe in this. Whether the French nuns, who according to Hovorka⁴ on a similar occasion also cut off their noses, really have done so I do not know, having been unable to find his authority. If they have done it they probably have brought about what they wished for, for, as Tagliacozzi says: "Narium apice abscisso panduntur sinus et partium internarum recessus, vasti patent hiatus et cavernae, instar antri Tryphonii⁵ obscurae; horrendum certe et abominandum aspicientibus spectaculum."

As an additional reason why the nose should be honoured Tagliacozzi mentions that it forms a sign of recognition and proves this by a quotation from Virgil. He might as proof have chosen the following story from a remarkable book then very much in vogue—viz., Henri Estienne's "Apologie pour Hérodote."⁶ Dramatis personae

are: "Un seigneur de Bourges nommé Boyuier," and several witnesses bribed to give evidence against him in a case of murder; these latter, however did not remember their lesson correctly: "Car au lieu que pour une des meilleures marques pour reconnoistre ledict Boyuier, on leur avoit dict qu'il avoit un nez fait à manche de rasoir, interroguez séparément par le président à quoy ils le reconnoistroyent, respondirent tous d'un mesme accord qu'ils le pourroyent reconnoistre aisément à un coup de rasoir qu'il avoit en sur le nez. Tellement que leur estant confronté ledict Boyuier contre lequel ils entendoyent déposer, dirent que ce n'estoit pas cestuy-la, pource qu'il n'avoit point de cicatrice sur le nez et ainsi estans decouverts, furent pendus: et le suborneur et faux accusateur fut decapité, et mis en quatre quartiers: mais en effigie: qui fut un grand avantage pour sa personne."

How far back the prepossession against misshapen noses dates is demonstrated by the Levitical law that excludes from the office of priest those endowed "vel parvo, vel grandi, et torto lequele ils entendoyent déposer, dirent que ce n'estoit pas cestuy-la, pource qu'il n'avoit point de cicatrice sur le nez et ainsi estans decouverts, furent pendus: et le suborneur et faux accusateur fut decapité, et mis en quatre quartiers: mais en effigie: qui fut un grand avantage pour sa personne."

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As it is well known, the Romans have given name to a certain form of aquiline noses. Nevertheless, one finds that they did not think crooked noses beautiful. So Clitipho mentions the bride offered him by his mother in the following uncomplimentary terms:⁷

"Rufarum illam virginem
Ciclam, sparso ore, adunco naso? Non possum, pater."

Nor did they like long noses; see, for instance, the catalogue of a Roman matron's attractions and defects⁸:

"O crurs, O brachia! Verum
Depygis, nasuta, brevi latere ac pede longo est."

Generally speaking, the nose played a very great, and to us sometimes strange, part in the language of the Romans of antiquity. It is, for instance, intended as a great praise when Horace says about the poet Lucilius that he was possessed of a well-blown nose⁹:

"Facetus,
Eunuchus naris, durus componere versus."

The word long-nosed (nasutus), nay, nasus itself, stands for acumen and criticism. Perhaps this may be accounted for as notions produced by a popular doctrine of physiognomics. This science has from antiquity down even to our days had its fervent votaries, but presumably none more persuaded than Lavater. It is nearly incredible what he is able to read out of a physiognomy. So by the discussion of Benjamin West's profile he expresses himself literally as follows:¹⁰ "Bis zum Nasenloche geht der reinste Ausdruck von Geist—Er sinkt schon, erlösch schon ein wenig unter der Nase; nicht dass der Umriss unedel werde; aber er sinkt von Größe gegen Mittelmässigkeit herab." His enthusiasm induces him in another place,¹¹ where he has given a description of the nose *comme il faut*, to declare: "So eine Nase—ist mehr werth als ein Königreich." I wonder only how he would have valued a nose like that of Pamphagus¹² that might be used as an extinguisher, a pair of bellows,

¹ Vulgate, Leviticus xxxi.

² Illustrations of Sterne, London, 1793.

³ Ph. Camerarius: Opera horum subsecivarum, Francofurt 1644, Centuria prima, p. 253.

⁴ Hero some Hebrew characters.

⁵ Terentius: Heauton Timorou, v. 5, 17-18.

⁶ Horatius: Satire, Lib. i., 92-93.

⁷ Horatius: Satire, Lib. i., 4, 7-8.

⁸ Joh. C. Lavater: Physiognomische Fragmente zur Beförderung der Menschenkenntnis und Menschenliebe. Leipzig und Winterthur, 1775-76. Dritte Versuch, S. 180.

⁹ Loc. cit., Florio Versuch, S. 257.

¹⁰ David. Erasmi Roterodami: Colloquia Patulliana. Roterod., 1633, p. 22.

¹ Gasparus Tallacotius: Chirurgia nova, &c. Francofurti, 1593. Caput quintum, p. 71.

² Joann. Baptista Egnatius, the authority of Tagliacozzi, only mentions the tragic event in very short terms (De Caesaribus, lib. iii., Venetiis, 1616, lib. ii., Robertus fil.).

³ See most of this in Matthaeus Westmonasteriensis Flores Historiarum, &c., Francofurti, 1601, p. 161.

⁴ For instance, the Rev. W. Hunt, D.Litt., President of the Royal Historical Society, in Dictionary of National Biography, vol. xvi., London, 1883, p. 342.

⁵ O. Hovorka: Die Kustere Nase, Wien, 1893, S. 6.

⁶ Qu. Tryphonii.

⁷ The edition of La Haye, 1735, tome i., p. 379.

boarding-pike, a trumpet, a pick-axe, a scythe, an anchor, a fork, or a fishing-hook.

But it was not only Lavater's eyes that possessed such singular discerning powers, also his nose appears to have been unique.¹⁸ "Ich glaube, dass ein feiner Geruch die Nationen riechen—und vielleicht eher unterscheiden könnte, als das Gesicht. (Mein Geruch) ist fein genug, das Daseyn oder Nache-syn gewisser Krankheiten zu bemerken, und wenn ich in gewisse leere Zimmer eintrete, so kann ich manchmal mit Zuversicht sagen: 'Hier muss ein Hektikus oder Maniakus, oder einer, der im Begriff ist es zu werden, gewesen seyn.' Und zwar waren meistens solche da gewesen, an deren Gesichte sich die Krankheit noch nicht zeigte. So kam mir einmal ein gewisser Geruch mit dem Besuch eines Fremden in mein Zimmer, den ich natürlicher Weise für ganz individuell hielt und weiter nicht achtete. Mehr als ein halb Jahr lang hernach kam mir derselbe Geruch, von dem ich ein halb Jahr lang keine Spur mehr hatte, so wie ich vorher keine davon gehabt hatte, wieder mit einem Fremden in mein Zimmer. Bald vernahm ich, dass dieser aus derselben Gegend kam. Ich musste also sogleich auf den Gedanken fallen, dass es Nationalgerüche geben könnte."

One scarcely knows whether the author wishes assertions of this kind to be taken seriously or not. This doubt does not exist when we direct our attention to the following jocos theories as to the etiology of certain malformations of the nose. One of these theories is quoted by Ferriar¹⁹ out of Bouchet's "Serées": "Ceste chaleur fait aussi, adjousta il encores, que les Mores sont fort camus, et diriez qu'on leur a coupé le nez sur le billot. cela procédant de la grande chaleur, qui ne permet pas que les os et les cartilages croissent beaucoup, comme venant d'une matière inutile et vacante: les petits enfans le confirment bien, lesquels estans chauds sont camus, ayans en leur jeunesse le nez fort court."

Another very widely spread theory is the ore first, as far as I know, mentioned by Rabelais²⁰: "Pourquoy, dist Gargantua, est ce que Frère Jean a si beau nez? Trut avant, dist le Moine. Selon vraye philosophie monastique c'est parce qu'il ma nourrice avoit les tetins moletz; en la lactant mon nez y enfondroit comme en beurre, et là s'eslevoit et croissoit comme la paste dedans la met. Les durs tetins de nourrices font les enfans camuz." This idea Sterne has eagerly taken up and developed.²¹ "Now Ambrose Paræus convinced my father that the length and the goodness of the nose was owing simply to the softness and flaccidity in the nurse's breast, as the flatness and shortness of *prune* noses was to the firmness and elastic repulsion of the same organ of nutrition in the hale and lively, which though happy for the woman, was the undoing of the child, inasmuch as his nose was so snubbed, so rebuf'd, so rebated, and so refrigerated thereby, as never to arrive *ad mensuram suam legitimam*; but that in case of the flaccidity and softness of the nurse's or mother's breast, by sinking into it, as into as much butter, the nose was comforted, nourished, plumped up, refreshed, refocillated, and set a-growing for ever." Sterne here quotes Ambrose Paré as his authority. Remembering the coolness with which Sterne has ascribed a grand folio, "De Nasia," to a never before or since heard of author, the great and learned Hafen Slawkembergus, one might feel tempted to think that also his assertion about Ambrose Paré was a hoax. But the great French surgeon really has written something of a similar kind and, as is clearly to be seen, in full earnest. In the chapter Des Mammelles et de la Poitrine de la Nourrice he says: "Elle doit avoir la poitrine large et les mammelles assez grosses, et non laches et pendantes, moyennes entre dures et molles. D'abondant l'enfant imprime le beut de son nez à la mammelle: la trouvant trop dure se farsche, et ne veut léter, et quelquefois en devient camus."

In order not to become too tedious I am going to stop here. The most appropriate way of finishing I can think of is by quoting the well known lines:²²

"Nasutus als trughe lieet, s a denique nazus
Quantum roborat ferre rotatus Atlas,
Et possit ipsum in decidere latium.
Nou petes in nazus dicere plura meas,
Ipse ego quam dixi."

THE DECLINING BIRTH-RATE AND FERTILITY OF MARRIAGE IN ENGLAND.

Two able papers on this important subject were read before the Royal Statistical Society on Dec. 19th, 1905; one jointly by Dr. Arthur Newsholme, medical officer of health of Brighton, and Dr. T. H. C. Stevenson, assistant medical officer to the Education Committee of the London County Council; and the other by Mr. G. Udny Yule, Newmarch Lecturer in Statistics, University College, London. The discussion on these papers was postponed and continued after the delivery of the President's address at the subsequent meeting of the society on Jan. 16th. Both these papers naturally treated the subject mainly from a statistical standpoint, with a view to analyse and if possible to explain the extent and true purport of recent changes in English marriage-rates and birth-rates. A careful study of these papers enforces two important and useful conclusions. In the first place that the crude birth-rate—that is, the proportion of registered births to population, unless duly corrected for the age-distribution of the population, very considerably understates the recent marked decline of the true birth-rate. The recent decline in the birth-rate has indeed caused a marked change in the age-constitution of the English population. The important bearing of varying age-distribution in different populations on marriage-rates, birth-rates, and death-rates has been urged by successive statistical superintendents at the General Register Office, and it is satisfactory to find that this fact is now very generally recognised by students of vital statistics. The second unavoidable conclusion to be deduced from these papers is that the recent steady decline of under-age marriages, and the somewhat general increase of age at marriage, causing a decreased proportion of young married women in the English population, accounts but for a very small part of the decline in the birth-rate.

Both papers, moreover, abundantly prove the existence of a marked and increasing decline in the birth-rate and in the fertility of marriage, that is in the proportion of births to a marriage. Dr. Newsholme's paper shows that the corrected birth-rate in England and Wales, which was 35.4 per 1000 in 1871, declined successively to 34.7 in 1881, 32.6 in 1891, and 28.4 in 1901, implying a startling increase in the rate of decline of fertility. With regard to what Dr. Newsholme and Dr. Stevenson style "social *felo-de-se*" it seems to be next to impossible to avoid the conclusion at which their investigation has led them. At the same time, however, it is well not to shut one's eyes to the fact that mathematical and statistical methods, even when handled as ably as they are in the two papers under consideration, are scarcely fitted to solve the problem of the true cause of this decreased and declining fertility of marriage in England.

There are many pessimists at the present time who, in the face of much cogent evidence to the contrary, persistently assert that the British nation is suffering from progressive physical deterioration. This assertion may, however, be true and if so it may quite possibly be the fact that this decline of fertility is, at any rate in part, one of the results of this physical deterioration. Careful study of these two papers and of the remarkable New South Wales report on the similar decline of fertility in that colony would, however, more probably lead to the conclusion that the true cause of this decline of fertility, here and elsewhere, is a serious decrease of moral stamina rather than the alleged increase of physical degeneration.

Mr. Yule's theory that economic factors are the main causes of fluctuations in marriage-rates and birth rates is more interesting than convincing. He states that having mathematically examined several individual factors in succession he finds that the movement of prices "is the only one that fulfils certain conditions which must hold good for the predominant cause of the changes in the marriage rate (if there be any single predominant cause) and that it does fulfil them fairly closely." As regards the marriage rate, Mr. Yule's figures appear to show that it rises with an increase in prices and also declines when they fall. That high prices should promote marriage seems paradoxical but high prices probably imply high wages and full employment and Mr. Yule's tables certainly support his theory.

¹⁸ See also, Vierte Veruch, S. 223 (in the note).

¹⁹ John Ferriar, M.D., Illustrations of Sterne, London, 1733, p. 113.

²⁰ La Vie de l'Herodote du Grand Gargantua, chap. 40.

²¹ La Vie de l'Herodote du Grand Gargantua, chap. xxxviii.

²² Les Œuvres d'Ambroise Paré, Lyon, 1623, p. 725.

²³ Martial, Epigramm, xlii, 2, 1-5.

It is difficult, however, to agree with this statistician when he further asserts "that the course of prices has been in some way, directly or indirectly, an important cause in the changes that have taken place in the reproductivity of the race." It is beyond all doubt that this country, speaking generally, and including all classes, now enjoys a far higher standard of material prosperity and comfort than it did 25 years ago before this decline in the birth-rate set in. This seems to forbid us to attribute correctly this decline in the fertility of our race, except most indirectly, to economic causes.

There is an important branch of this subject which, so far as is possible, is fully and carefully treated in both the papers under notice—the inquiry whether this decline in the fertility of marriage is equally or unequally shared in the various social grades. It is not necessary to press the importance of this question to the future of our race which has been so well urged and fully discussed by Professor Karl Pearson. Unfortunately, the construction of trustworthy class vital statistics is at present fraught with almost insurmountable difficulty. The authors of both papers have endeavoured to estimate the relative decline of the birth-rate in different classes of our population by comparing the statistics of different metropolitan boroughs in which the varying proportion of domestic servants indicates a greater or less degree of material prosperity. Dr. Newsholme and Dr. Stevenson show in their paper that the London corrected birth-rate in 1903 ranged from 31·6 per 1000 in a group of boroughs in which the domestic servants did not average more than ten in 100 families, to 20·5 per 1000 in the group of well-to-do boroughs in which the domestic servants averaged above 66 in 100 families. It may be noted, however, that in the four other groups, comprising 65 per cent. of the entire population, the corrected birth-rate only ranged from 25·4 to 25·8 per 1000. It should also be pointed out that the group in which the high birth-rate occurred included several districts in East London containing a large proportion of alien Jews and that the high birth-rate therein has probably a racial rather than a true class signification. Unfortunately the authors of this paper have not found it possible, or at any rate have not attempted, to give any figures for these groups of London districts at a previous date and thus to throw light on the question whether the recent decline in the birth-rate has been greater in the well-to-do than in the poorer districts. In view of the unquestionable importance of this branch of the inquiry it may be hoped that the General Register Office will find means to furnish material for a closer and more satisfactory study of class birth-rates than is at present possible.

It seems desirable, in conclusion, to refer briefly to a fact that is clearly brought out in these two papers—namely, that the decline in the birth-rate is not due to the steady increase of the urbanisation of our population and that in point of fact the decline between 1881 and 1903 was actually greater in the selected rural counties than in the selected urban counties. It is stated that the decline in the urban birth-rate during these 12 years was only 15 per cent., while it was 18 per cent. in the selected rural counties. The fact, however, remains that the corrected birth-rate is still distinctly higher in our rural than in our urban populations, although there is no obvious natural explanation of this lower birth-rate in towns.

MEDICINE AND THE LAW.

The Smell of Fried Fish as a Nuisance.

A RECENT motion before Mr. Justice Kekewich in the Chancery Division for an injunction against persons carrying on a fried-fish business in Dean-street, Soho, ended in an admission that a nuisance was caused and an undertaking that it should be abated, subject to an agreement by the plaintiff not to enforce the injunction granted to him for a fortnight. The defendant, Sbanpitzki by name, carried on his trade on the ground floor and the plaintiff, Abraham, who conducted a business, said to have been established for over a century, in embroidering uniforms, complained that the penetrating and offensive smell of the fish fried in grease not only made his workpeople ill but impregnated the clothes which they wore and those upon which they worked so that the wearers of them, including his customers, were strongly objected. Difficulty had apparently been found in tracing the course of the odour and in ascertaining why it

reached the workshop upstairs so readily. The question had, however, been solved the day before the case came into court, when it was found by a surveyor that there were two chases or channels passing down the interior wall from the upper part of the house to the basement where the fish was fried, one of which contained a rainwater pipe and the other a soil pipe. The precise condition and destination of these pipes are not mentioned in the report we have seen of the hearing before Mr. Justice Kekewich, but considering the not very desirable course which they appear to take it is to be hoped that the soundness of the soil pipe itself came under the observation of the surveyor.

Robbing Out-patients at Hospitals: Singular Story.

A new and curious form of thieving has earned six months' hard labour for a woman who, if she had not carried on her evil practices quite so assiduously, might apparently have escaped detection for some time. Her method appears to have been to borrow a neighbour's baby and to take it to the out-patient department of a hospital as if for treatment. When leaving the hospital she simply placed the bogus patient in the perambulator or mail-cart in which some other little patient had been brought and departed. In this way she had succeeded in stealing at least 20 of these vehicles which she afterwards pawned, the institutions which she patronised being the West London Hospital and the Children's Hospital, Paddington-green. She appears to have confessed the regularity and persistence of her thefts, no other court being open to her as nearly 20 stolen perambulators and mail-carts were recovered by the police. The thefts were certainly ingenious.

A Sham Medical Practitioner.

Mr. McConnell, K.C., has passed a sentence of 12 months' imprisonment upon a man described in the calendar under the name of Forbes, a clerk, who had committed wholesale frauds under the titles of Baron Forbes and Dr. Forbes. The evidence of Detective-sergeant Bex with regard to the personation of a medical man by the prisoner is to be noted by any who may desire to employ alleged medical men of whom they know nothing without verifying their supposed qualifications. The detective stated that the prisoner had been a student at the Middlesex Hospital in 1879 but had not qualified. He had been to the Gold Coast, where a medical man of the name of Forbes was practising at the time whom he had probably met there. In 1893 he returned to England and since then had personated the gentleman mentioned, increasing the age which he assigned to himself for this purpose. He had been employed at various times by a firm of wholesale druggists and by several medical men of the strength of his pretended qualifications. Mr. McConnell in passing sentence, described this conduct of the prisoner as one of the worst features of the case and the jury expressed their approval of this view.

A Garbage-monger Fined £50.

At the Guildhall police court recently a fine of £50 with 5s. costs was inflicted by Alderman Sir Joseph Renal upon a butcher at Llanely. The defendant had bought for 8s. a pig which, considering the size of its frame, should have weighed at least 400 pounds. As a matter of fact, it weighed 249 pounds and the price given was equivalent to about 3d. per stone. Dr. W. Collingridge described the carcass as much wasted by tuberculosis and said that in every part its condition was disgusting. Sir Joseph Renals decided to treat the case, though "as wicked a one as he had ever had before him," as one of gross carelessness, and the butcher escaped prison. The frequency with which these cases are noted in our columns speaks not only for the vigilance of Dr. Collingridge, the medical officer to the corporation, but proves that in the matter of public health many purveyors of provisions to London are criminally ignorant.

HYGIENE OF COTTAGES IN AN AGRICULTURAL DISTRICT.

THE fact is too well known to need further emphasis that in many respects the large towns in England possess hygienic advantages which are absent in rural neighbourhoods. The domestic environment of the very poor in great cities too often abounds with serious faults and dangers, while the town workman, on the other hand, obtains systematic water-supply and drainage and a more rigid supervision

of the sanitary conditions under which he lives. The pure air of the country and the undefiled spring, which should mean so much in the preservation of health, too often count for nothing because the country labourer does not live in a manner to benefit by them. His home defiles them both. This is a general statement and many instances, increasing we hope and believe in number daily, could be adduced where the home of the agricultural labourer is most carefully planned and maintained, but in purely agricultural parts of England the labourer's cottage is too often lacking in proper accommodation and is in a deplorable sanitary condition.

We are led to these reflections—similar, we are aware, to many that have appeared in our columns—by a letter from a frequent correspondent which we may here quote. "Having been on a visit recently," he writes, "to a purely agricultural district in the Eastern counties, I availed myself of the opportunity to inspect, in a superficial manner, of course, certain labourers' cottages which attracted my attention. I made no sanitary inspection and had no *locus standi* from which to do so. I merely used my eyes and nose and I learned sufficient to warrant an expression of opinion the reverse of respectful to rural England. I may mention that I was brought up in the district but it happened that I had not visited it for about ten years. I found that on the whole the cottages were in a better sanitary state than when I was last in the neighbourhood, but there was such ample room for improvement that I could not feel cheered by the progress made. A typical labourer's cottage of the worse kind in that part of England is usually built of clay lumps; if bricks are used they are always of an inferior kind. The cottage contains, as a rule, two living rooms and two bedrooms, though sometimes the separate accommodation is less. The rooms are low and the windows are small and seldom opened, the floors of the living rooms are of brick, generally damp, and in a bad state of repair. The sleeping rooms are ill-lighted and ill-ventilated owing to the smallness of the windows and the lowness of the ceiling, and the roof is too often in a defective state, freely admitting rain and wind. If the cottage is structurally in a fairly good condition, and the household is small, no complaints are likely to be made; but if there are many children, as they grow up, overcrowding will lead to general impairment of the health of the family and it will be hardly possible to provide such separate accommodation for the boys and girls as decorum would suggest. Rheumatism is a disease to which the agricultural labourer is peculiarly liable. His predisposition to it may be accounted for principally by the exposure to vicissitudes of weather which is inseparable from his daily work and partly to the depressing influence of the draughty, damp, overcrowded cottage to which he returns in the evening. If he were better housed he might then obtain at home such rest and comfort as would counteract the fatigues of the day, but at present he can hardly count upon this. Overcrowding, again, not only predisposes to pulmonary tuberculosis among all the occupants of the cottage, but among the younger ones it creates a special liability to the spread of whooping-cough, scarlet fever, measles, and certain parasitic skin affections. It might be thought that a cottage in the country, even if it presented structural defects, would at least have the advantage of healthful surroundings, but the facts are only too often incompatible with this ideal. In almost all the cottages which I visited open wells are the chief sources of domestic water-supply. Many of such wells present every possible drawback from a sanitary point of view, being not only surface wells but placed in close proximity to the privy and the pig-sty. If the well is in the garden the result is practically the same, for the privy and the pig-sty are the source of the manure with which the garden is fertilised."

A well-known American medical man, Dr. William C. Daggett of New Haven, read before the Connecticut Medical Society in the spring of 1904 a paper in which he insisted that the source of urban typhoid fever must be sought in the country, and that to abolish the disease the work of sanitation should be initiated in the rural districts. He contended that visitors to the country brought back typhoid fever to the towns and that the disease was also conveyed by the agency of milk and vegetables. In his opinion the starting-points of epidemics of typhoid fever occurring either in their immediate neighbourhood, or more probably in some distant town the water-supply of which has been infected

by the privy. Of course, the conditions of the agricultural districts of Great Britain and of the United States are by no means alike and possibly Dr. Daggett's view of the situation may be too gloomy, but the water-supply of many country cottages is seldom, if ever, sufficiently protected against the risk of contamination. Mr. Rider Haggard has pointed out in forcible terms that one of the reasons which induce the rural population to migrate to the towns is the difficulty of obtaining proper house accommodation on reasonable terms in country districts. The question, therefore, of providing agricultural labourers with good cottages would seem to be one of national importance. The proletariat have made no definite answer to the questions asked at the recent polls that the new Government will owe to such matters as the housing of the rural poor particular attention.

Looking Back.

FROM

THE LANCET, SATURDAY, Jan. 26th, 1826.

A correspondent has favoured us with the following witty prospectus.

"NEW MEDICAL JOURNAL,
On improved Principles.

THE public are respectfully informed, that on Saturday, January 26, 1828, will be published, the first number of a new Medical Journal, to be entitled,

THE ACTUAL CAUTERY.

The great object of the associated editors, is the earliest possible dissemination of 'sound medical and surgical knowledge' throughout the universe; and all contributors may rest assured, that within ten minutes of the first discovery of any fact in medicine, surgery, and the collateral sciences, it shall be put to press, and with all possible haste made known to the public.

The office will be open at all hours for the reception of communications, and the clerk is directed to note carefully, by a stop-watch, the minute at which they are received, in order to ensure to gentlemen the priority of their discoveries.

The name of this Journal will be a sufficient guarantee to the public at large, of the determination of the editors to spare no individual in any department of the profession. They will, however, not be answerable for libels, in a court of law, but have engaged, at a high salary, a gentleman from the sister kingdom, to give all other satisfaction that may be required. Another object of this Journal, is to develop the latent causes of the present convulsed, and distracted state of the profession in this country, on which point the medical world have of late been most grossly misled.

Attached to no party, tools of no junta, organs of no faction, actuated by the purest public spirit, disdaining all reward, save the gratitude of posterity, the determination of the editors is to outstrip the 'March of Intellect,' to set at rest every disputed point in medicine, and to reduce the science to mathematical certainty.

One of the new features of this Journal is, that each number will contain at least two leading articles; the reviews will be spirited; no epigram will be inserted that has not some point; and the lives of eminent practitioners will be given, as soon as they are known to be 'in *Articulo Mortis*.'

Correspondents have been engaged, at a great expense, in all parts of the world, except 'Otaheite,' where arrangements will be shortly entered into with the most distinguished Fellows of the Royal College of Physicians in that country.

N.B. The Journal will be published regularly on Saturday mornings, but may be had in all the shops on Thursday at 2 o'clock. Members of parliament are engaged to frank for country circulation.

P.S. The different colours of the rainbow being already occupied by publications pretending to similar character, the present Journal will appear alternately in a black and white cover, to imitate which will be deemed 'literary plunder.' The unsold copies of this Journal, bound in calf, at the

end of the year, will be distributed among such of the correspondents as have favoured the editors with the longest reports, cases, essays, &c. &c. during that period of time.

* * All communications, for the present, to be addressed to MONSR. TONSON, at our office, *Warrick Street, Golden Square.*"

THE REPORTS OF THE ASYLUMS OF THE WEST RIDING OF YORKSHIRE FOR THE YEAR 1904.

THESE asylums number five, four of which are for the pauper class and the fifth, at Scalebor Park, accommodates private patients. The reports of all are presented now in one volume which opens with a report from the West Riding asylums committee. On the recommendation of this body the county council of the West Riding adopted a resolution in which alarm was expressed at the progressive increase of lunacy in the country and the presentation of a memorial to the Government was agreed to praying that a Royal Commission should be appointed to inquire into the causes of such increase and the steps which should be taken to arrest the same. This memorial was duly presented and a copy of it was sent to the County Councils' Association, the executive council of which adopted much the same resolution as the above. No action was taken by the Government. The total net increase during 1904 of patients chargeable to the Riding was 106. Table No. 1 deals in a very convenient way with the statistics as to admissions, discharges, and deaths in the three old asylums (Wakefield, Wadsley, and Menston) annually for a period of ten years (1895-1904) with annual averages. The admissions during 1904 for the three institutions in the order named were 505, 437, and 378. The annual average percentage of recoveries on admissions for the ten years was respectively 40.07, 40.7, and 39.91. These are satisfactory rates. The percentage of late years at Wakefield is very much the same as at the other asylums, from which it would seem that up to the present the greater facilities for treatment which have of recent years been provided at that asylum have not been productive of better results. It is true that in 1904 the percentage recovery-rate at Wakefield was 44.55 as compared with 39.3 and 35.7 at the other asylums but these figures cover only one year. It is also the case that for 1903 the recovery-rate at Wakefield was 49.9 per cent. as against 35.3 per cent. for county and borough asylums in general. The average number resident in 1904 was for Wakefield, 1811; for Wadsley, 1652; and for Menston, 1595. The annual average percentage of deaths on the annual average number resident during the ten years was respectively 10.97, 11.4, and 11.51, the figures for county and borough asylums for the same period being 10.11.

The average annual increase of the insane of the West Riding in asylums during the past ten years is 128, whereas in workhouses there has been a decrease amounting on the average annually to seven. The usual tables of medical statistics are given for the different asylums; if these could be collated and a summary of the whole provided the result could not fail to be of great value, having regard to the amount of material available. The tables of causation of insanity at the three asylums mentioned are based in two cases upon the statistics of ten years and in the third case of 16 years and are therefore very useful. The percentage incidence of heredity, direct and collateral, is at Wakefield 32.7 and at Menston and Wadsley 22.8 and 23.1 respectively. When it is remembered that the statistics are based upon the admissions of several years this discrepancy between the first-named institution and the others requires some explanation. The population drawn from must be much the same in nature at all three asylums, and it seems not improbable that at Wakefield the histories are more fully inquired into. We notice that "other bodily diseases or disorders" are assigned as causes in 18.1, 19.2, and 23.3 per cent. respectively in the three asylums. It would be of interest to know the kinds of disease which were operative. Alcohol was assigned as a cause in 23.1 per cent. of the Wakefield cases as against 14 and 16 per cent. in the other two asylums.

Turning to the reports of the medical superintendents, we find Dr. J. G. McDowall of Menston Asylum referring to an excess of male patients over accommodation to the extent of

31, which has, however, been largely counteracted by utilizing the infectious hospital for cases suffering from tuberculous disease and diarrhoea, and by a re-arrangement it was found possible to add 16 beds to the accommodation. The asylum being full notice had to be given to the unions that none but acute cases could be received. A much trusted patient who had never exhibited any suicidal tendencies was found kneeling in a bath dead, his face immersed in a few inches of water. Death was, it is thought, due rather to the sudden occurrence of an epileptic fit than to suicide. A coroner's jury considered that the patient drowned himself whilst insane. Another man, who was removed from the asylum contrary to the medical superintendent's advice, killed himself with a razor the day following discharge. Why did the asylum committee discharge the patient contrary to the medical officer's advice? Its consent was necessary if, as we gather, the patient was a pauper. Fortunately, committees very seldom act thus. Two deaths were due to enteric fever and five to "enteritis and colitis." The Commissioners in Lunacy report 34 attacks of dysentery to have occurred since their last visit.

Dr. W. S. Kay of Wadsley comments, as in previous reports, upon the large proportion of hopeless cases amongst the admissions—cases debilitated and paralysed. Colitis was prevalent on the overcrowded male side, several very severe cases occurring, of which 13 died.

At Wakefield the medical superintendent, Mr. W. Bran Lewis, also remarks upon the hopeless character of a large proportion (41.58 per cent.) of the admissions. These cases are tabulated and comprise cases of imbecility, epilepsy, general paralysis, and senile and organic brain disease. This is regrettable considering the unusually good manner in which this asylum is equipped to deal with curable cases. A large proportion of harmless and senile cases crowds up the available space; these might be in the union infirmary or with their friends. The admission-rate of senile cases is shown to be not at all excessive but they tend to accumulate. In his last report Mr. Lewis discussed at length the pathology of colitis or asylum dysentery and opposed the ordinary views which regard this disease as caused by defective sanitation, overcrowding, dietetic defect, or these conditions combined. Whilst not contesting the fact that a specific organism is present he considers that the intestinal tract is rendered vulnerable to this by the chronic constipation which he believes to be present in these cases and which is brought about by atony and torpor of the bowel wall. Mr. Lewis has put to the test the method of prophylactic treatment, by the administration of regular doses of saline aperient, which he referred to in the last report, and the figures which he gives, and which cover the period from April, 1902, to July, 1905, are certainly striking and show a great diminution in the number of cases of the disease since treatment was begun. A more prolonged experience, supplemented by the experience of other asylums, should be most instructive. At the hospital for acute cases of this institution good work is in progress. Hydro-electric treatment in the form of the sinusoidal current gives satisfactory results; we find that of 54 cases treated in 1903 and 1904 and almost entirely composed of persons in states of mania, melancholia, and stupor, 35 recovered and eight were relieved. Mr. Lewis considers the electric bath a most useful accessory to treatment, especially in cases of melancholia and stupor; and this is the experience of certain other alienists. But before these results can be viewed in their true light we require a series of control cases which shall have been submitted to the ordinary "expectant" treatment of asylums and treatment by the warm bath without electricity. Static electricity and high-frequency methods are also employed; of 20 cases so treated in 1903 and 1904 11 are reported to have recovered and four were relieved. Here, again, cases of melancholia and of that state with stupor appear to be best adapted for treatment. Actino-therapy (the x rays and lupus lamp) has been employed for lupus and rodent ulcer with gratifying results. This asylum has an idiot and imbecile department with accommodation for 70 male cases, which was reported full in 1903. It is proposed to provide similar accommodation for imbecile girls at one of the asylums. Special teaching is given to weak-minded children in this department with good results, as instanced by cases reported. The plan ought to be followed widely in asylums. Mr. Lewis advocates a custodial home of this kind for each large county or group of counties from which if

ufficiently improved the children might be removed to a county industrial colony. The out-patient department of the asylum shows much activity, 200 cases being under treatment, a very large proportion of whom suffered from epilepsy and associated nervous and mental disturbances. Good work continues to be done in the pathological laboratory. The report shows that the work of this institution continues to be pervaded by the same scientific spirit and actuated by the same high ideal which have so long procured for it a distinguished position.

In June, 1904, the fourth county asylum for the West Riding was opened at Storther's Hall, Huddersfield. Dr. T. S. Adair, the medical superintendent, reports that at the close of that year 132 patients were in residence, having been received mainly from the sister asylum at Wadsley. From the report of the Commissioners in Lunacy we find that a hospital for acute cases with four wards on each side, to accommodate 104 patients of each sex, has been provided at this asylum, from which we conclude that the asylums committee thinks favourably of this plan which it put into practice first at Wakefield. In this hospital the proportion of nursing staff to patients for day duty will be the high one of 1 to 5.

The third annual report of the West Riding asylum for private patients at Scalebar Park is presented by Dr. J. R. Gilmoor, the medical superintendent. The average number resident daily was 108, as compared with 62 in 1903. 119 patients were in residence at the close of 1904, during which year 112 were admitted. The recovery rate on the admissions was 26.19 per cent. for the males and 48.57 per cent. for the females; the female cases were of a more favourable class for treatment. Of the 13 deaths none was due to tuberculosis. Heredity of insanity was present in 28 of the admissions. 95 per cent. of the patients were paying from 25s. to 42s. per week. The lowest scale of payment was 25s.

VITAL STATISTICS.

ANNUAL BIRTH-RATES AND DEATH-RATES FROM THE SEVEN CHIEF EPIDEMIC DISEASES IN ENGLAND AND WALES DURING 1905.

	Annual rates per 1000 living.			Infant mortality— Annual death- rate of infants under one year per 1000 births.
	Births	Deaths from all causes.	Deaths from seven chief epidemic diseases.	
England and Wales	27.2	15.2	1.52	123
76 great towns	25.2	15.7	1.68	140
141 smaller towns	26.9	14.4	1.50	132
England and Wales less the 217 towns	25.3	14.9	1.09	115

NOTE.—These rates are subject to revision.

We are indebted to the Registrar-General for the above death-rates for the urban and rural areas of England and Wales in the year 1905. We publish them for the information especially of medical officers of health who require these data for the compilation of their annual reports.

HEALTH OF ENGLISH TOWNS

In 76 of the largest English towns 6034 births and 4800 deaths were registered during the week ending Jan. 20th. The annual rate of mortality in these towns, which had been 17.4, 16.2, and 16.7 per 1000 in the three preceding weeks, further declined last week to 15.8 per 1000. In London the death-rate was 15.5 per 1000, while it averaged 16.0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5.7 in Southwick, 7.3 in Walthamstow, 8.6 in King's Norton, 8.9 in Burton-on-Trent, 9.4 in Willesden and in Portsmouth, 9.6 in Hornsey, and 10.1 in Leyton; the highest rates were 19.4 in Hastings, 19.5 in Merthyr Tydfil, 20.2 in Birmingham and in Liverpool, 21.1 in Newport (Mon.), 22.1 in Swansea, 24.3 in Sunderland, and 28.2 in Preston. The 4500 deaths in these towns last week included 169 which were attributed to the principal infectious diseases, against 465, 454, and 283 in the

three preceding weeks; of these 369 deaths, 108 resulted from measles, 92 from whooping-cough, 60 from diphtheria, 49 from scarlet fever, 36 from diarrhoea, 23 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Hastings, Great Yarmouth, Burton-on-Trent, Wolverhampton, Walsall, King's Norton, Coventry, Grimsby, Barnley, York, or Tynemouth; among the other towns the highest death-rates from the principal infectious diseases were recorded in Tottenham, Reading, Handsworth (Staffs.), West Bromwich, Blackburn, Preston, and Gateshead. The greatest proportional mortality from measles occurred in Tottenham, Blackburn, Preston, Leeds, and Swansea; from diphtheria in Wallasey, St. Helen's, and Stockton-on-Tees; from whooping-cough in Reading, Plymouth, Handsworth (Staffs.), West Bromwich, Aston Manor, and Gateshead; from "fever" in Northampton; and from diarrhoea in Middlesbrough. The mortality from scarlet fever showed no marked excess in any of the large towns. One death from small-pox was registered last week in Bristol, but not one in any of the other 76 large towns; and no cases of this disease were under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 3066, against 3446, 3299, and 3062 at the end of the three preceding weeks; 328 new cases were admitted during the week, against 295, 291, and 257 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 426, 454, and 369 in the three preceding weeks, further declined last week to 299 and were 71 below the corrected average number in the corresponding periods of the four preceding years. The causes of 54, or 1.1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and 48 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Rochdale, Blackburn, Preston, Middlesbrough, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18.2, 19.8, and 17.8 per 1000 in the three preceding weeks, rose again to 18.2 per 1000 during the week ending Jan. 20th, but was 2.4 per 1000 in excess of the mean rate during the same period in the 78 large English towns. The rates in the eight Scotch towns ranged from 11.4 in Paisley and 13.9 in Leith to 18.7 in Glasgow and 22.8 in Dundee. The 624 deaths in these towns included 24 which were referred to measles, 19 to diarrhoea, five to diphtheria, three to scarlet fever, and two to whooping-cough, but not any to small-pox or "fever." In all, 53 deaths resulted from these principal infectious diseases last week, against 65, 80, and 61 in the three preceding weeks. These 53 deaths were equal to an annual rate of 1.5 per 1000, which was 0.3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 25, 33, and 28 in the three preceding weeks, further declined last week to 24, of which 19 occurred in Glasgow and three in Dundee. The deaths from diarrhoea, which had been 14, 20, and 16 in the three preceding weeks, rose again to 19 last week, and included eight in Dundee, five in Glasgow, four in Aberdeen, and two in Edinburgh. The fatal cases of diphtheria, which had been 12, 13, and eight in the three preceding weeks, further declined last week to five, of which two were registered in Perth. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to three, all of which occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 99, 126, and 126 in the three preceding weeks, further declined last week to 114, and were 42 below the number in the corresponding period of last year. The causes of 21, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21.7 per 1000 in each of the two preceding weeks, declined to

20.1 per 1000 during the week ending Jan. 20th. During the past four weeks the death-rate has averaged 20.4 per 1000, the rates during the same period being 17.6 in London and 17.2 in Edinburgh. The 146 deaths of persons belonging to Dublin registered during the week under notice were 12 below the number in the preceding week and included three which were referred to the principal infectious diseases, against seven, six, and seven in the three preceding weeks; of these, one resulted from scarlet fever, one from whooping-cough, and one from diarrhoea, but not any from small-pox, measles, diphtheria, or "fever." These three deaths were equal to an annual rate of 0.4 per 1000, the death-rates last week from the principal infectious diseases being 1.2 in London and 0.6 in Edinburgh. The 146 deaths in Dublin last week included 28 of children under one year of age and 38 of persons aged 60 years and upwards; the deaths of infants showed a slight decline, while those of elderly persons exceeded the number in the preceding week. Five inquest cases and six deaths from violence were recorded, and 54, or more than a third, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

VARICOCELE AND CANDIDATES FOR THE ARMY.

We understand that the discussion with regard to varicocele as a disqualification for army candidates which has recently taken place in THE LANCET and the service newspapers has had the effect of inducing the authorities to modify the rules which have hitherto been in force. The text of the new regulations has not yet been published, but there is every reason to believe that the proposed alterations will lead to the acceptance by the Army Medical Board of many candidates who would have been disqualified under the old rules.

ROYAL NAVY MEDICAL SERVICE.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Everard Home Saunders has been placed on the Retired List at his own request, with permission to assume the rank of Retired Deputy Inspector-General of Hospitals and Fleets (dated Jan. 18th, 1906).

The following appointments are notified:—Staff Surgeons: G. A. S. Bell to the *Monmouth* and H. Spicer to the *Cornwall*. Surgeons: A. C. W. Newport to the *Gladiator* and H. B. German to the *Argyll*.

COLDSTREAM GUARDS.

Surgeon-Lieutenant-Colonel Warren R. Crooke-Lawless is seconded for service on the Staff of the Viceroy and Governor-General of India (dated Nov. 2nd, 1905).

ROYAL ARMY MEDICAL CORPS.

Colonel Jules I. Routh is placed on temporary half-pay on account of ill-health (dated Jan. 8th, 1906). Lieutenant-Colonel Robert H. Forman to be Colonel, vice J. I. Routh (dated Jan. 8th, 1906). Major John H. Rivers, from the Seconded List, to be Major (dated Jan. 17th, 1906). Captain Hamilton G. F. Stallard, from the Seconded List, to be Captain (dated Jan. 7th, 1906).

Lieutenant-Colonel C. W. Johnson joins at Woolwich. Captain H. G. F. Stallard, attached to the Egyptian Army, is posted to the Eastern Command for duty at Woolwich. Major C. H. Melville, Sanitary Officer, Army Headquarters, India, is appointed an Expert in Sanitation on the Advisory Board.

Lieutenant-Colonel Alfred Peterkin is granted the local rank of Colonel while serving in Mauritius (dated Nov. 22nd, 1905). Lieutenant-Colonel George D. Hunter, D.S.O., is granted the local rank of Colonel whilst employed with the Egyptian Army (dated Jan. 24th, 1906).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain John M. Moir to be Surgeon-Major (dated Jan. 13th, 1906).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Denis Murphy to be Lieutenant (dated Jan. 24th, 1906).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Midlothian: The undermentioned officers resign their commissions:

Surgeon-Captain A. A. S. Skirving, O.M.G. (dated Jan. 24th, 1906); Surgeon-Captain (Honorary Lieutenant in the Army) W. M. Taylor (dated Jan. 24th, 1906).

Rifle: 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment: Supernumerary Surgeon-Captain F. E. A. Webb is absorbed into the Establishment (dated Nov. 1st, 1905). 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Captain (Major, Volunteers, retired) J. Chestnutt is granted the honorary rank of Surgeon-Major (dated Jan. 24th, 1906). 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry: Supernumerary Surgeon-Major Q. Chalmers (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Highland Light Infantry Volunteer Infantry Brigade) to be Surgeon-Lieutenant-Colonel, remaining Supernumerary (dated Jan. 24th, 1906). 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Peter McFadyen to be Surgeon-Lieutenant (dated Jan. 24th, 1906).

DEATHS IN THE SERVICES.

Deputy Inspector-General Walter Frederick Cope Bartlett on Jan. 14th at Plymouth. He entered the service as surgeon in 1856 and was promoted to fleet surgeon in December, 1877, retiring in June, 1887, with the rank of deputy inspector general of hospitals and fleets. He was assistant surgeon of the *Raleigh* when she was wrecked off the China coast in April, 1857. He afterwards served in the hospital ship at Hong-Kong during the China war, 1857-60 (medal), and was fleet surgeon of the *Agincourt* during the Egyptian war in 1882 (medal and Khedive's bronze star).

APOTHECARIES IN THE GERMAN ARMY.

The pharmaceutical department of the German army was reorganised in 1902. In Germany medical and pharmaceutical students are allowed to perform the military duty which is incumbent upon all able-bodied adolescents of the male sex by volunteering for one year, but before they can claim this privilege they have to produce a certificate of aptitude for military service from a board appointed by the State and must also undertake to equip, to clothe, and to maintain themselves at their own expense. Military apothecaries on the permanent list are recruited from these volunteers. When the new organisation came into force they were 49 in number, all classed as officers, although their relative rank was not defined, but when the new scheme is completed their strength will be considerably increased. The official title of the chief of the department is Oberstabsapotheker. He is attached to the medical section of the War Office, where he deals with the technical questions appertaining to his specialty and also controls all military pharmacies whether they belong to the active army or to the reserve. Next in rank are the Korpsstabsapotheker, 24 in number. One of these officers is attached to each of the 23 army corps into which the German army is divided. Under the orders of the principal medical officer he is responsible for the efficiency and good order of everything connected with his department, his duties including the bi-annual inspection of every pharmacy in the command, the control of supply and expenditure in these establishments, the auditing of their accounts, the superintendence of subordinates not only with the colours but also in the reserve, and the direction of the analytical laboratory with which every army corps is provided. The officers of the third grade are designated Stabsapotheker, and in 1902 they too were 24 in number. The duties of a Stabsapotheker consist in superintending the sanitary depot of the army corps to which he belongs and in managing the pharmacy of the garrison hospital at headquarters. According to the reorganisation decree of 1902 every military hospital with 71 beds and upwards should have a Stabsapotheker in charge of its pharmacy, but this part of the scheme has not as yet been carried out. The pharmaceutical students serving for a year as volunteers are distributed according to requirements among 120 hospitals to the number of 265, some of them doing additional duty in the laboratories and sanitary depôts. There are also five more serving in the Kaiser Wilhelm Academy at Berlin under a Korpsstabsapotheker, which brings the total strength up to 270. After serving for six months a volunteer student may be permitted to return to his home in order that he may complete his professional education and obtain a diploma. He then has to resume military duty for a second period of six months and, should he be desirous of joining the permanent branch, must next go through a special course of six

weeks' duration to the satisfaction of the principal medical officer. Having surmounted this test the student has then to go through a course of analytical chemistry, with special reference to water and alimentary substances, in a Government laboratory. The duration of this course is 18 months and at the end of it the candidate has to satisfy a board of examiners. Ability to carry out analyses was rendered obligatory in 1902 for all the apothecaries who were then serving and all desirous of remaining in the department were obliged to provide themselves with the State diploma. The relief of military medical officers from more or less uncongenial work in the superintendence of pharmacies is a distinct step in advance but as yet the reform is incomplete. In all hospitals of less than 71 beds the medical officer is supplied with a limited stock of simple medicaments of which he has to control the distribution. Should more complicated medicine be required he must have recourse to the civilian pharmacy of the locality. The fact that the total strength of the pharmaceutical department of the German army in 1894 was only 217 of all ranks, whereas in 1904 it was 321, is of good augury that in time all military medical officers will be relieved from pharmaceutical duty. The details given above are taken for the most part from an article by Apothecary-Major of the First Class Kopp in the *Archives de Médecine et de Pharmacie Militaires* for December, 1905.

SELF CONSTITUTED JUDGES.

It is reported in the *Syn Otetchestvo* that a marine of the warship *Georgia Pobedonozca*, named Mlachotin, who was under observation in the Cronstadt hospital as a patient presumed to be insane, has been ordered before a court by the medical specialists in attendance with the observation that "he is a sly malingerer meriting sentence of death." No doubt, adds the journal quoted, this extraordinary assumption of juridical prerogative will be inquired into. It is an inversion of what usually occurs, for as a rule it is the intervention of the medical man which prevents a sick man from being treated as a responsible criminal.

MILITARY HYGIENE ON ACTIVE SERVICE.

At the Royal United Service Institution on Jan. 18th Surgeon-General A. Keogh, C.B., M.D.R.U.I., Director-General A.M.S., presided at the lecture given by Major T. H. J. C. Goodwin, D.S.O., R.A.M.C., on *Military Hygiene on Active Service*. Several officers took part in the interesting discussion which followed.

Correspondence.

"Audi alteram partem."

PHYSIOLOGICAL TESTS FOR PHARMACEUTICAL PREPARATIONS.

To the Editors of THE LANCET.

SIRS,—As my name has been quoted in the letters which have appeared on physiological tests for drugs may I briefly state the conclusions to which I have been led. We know that plants vary considerably in the amount of the active constituents which they contain; season, soil, climatic conditions, &c., all tend to modify the percentage of toxic principle. The British Pharmacopœia fully recognises this fact and has determined that, as far as possible, all potent galenicals shall be made to contain a definite amount of active substance—that is, they must conform to a chemical standard. It is not possible to determine the amount of active principle in certain drugs by chemical means, because their chemistry is too ill-defined; such drugs are those of the digitalis group, ergot, Indian hemp, and a few others. Moreover, it is just these drugs which exhibit the widest variations in physiological activity and hence the introduction of bio-chemical tests, which form an accurate means of determining the amount of active principle present. Dr. Haynes and myself have clearly shown that the activity of the drugs mentioned varies within the widest ranges. To take a single example, that of ergot, which is quoted by your correspondent, Dr. William Martin. We have shown, though we have not yet published, that the preparations of this drug, as sold by the leading wholesale houses, vary enormously in potency; and further, that preparations which we have ourselves

made from different samples of the crude ergot show the same variability. It must be a matter of general regret that such important drugs as those named should be so variable in action; and the importance of putting into the hands of the physician a remedy which will produce the effects it is reputed to have, cannot be over-estimated. Yet the fact remains that much of the ergot at present sold is useless. We hope at an early date to put the case of ergot more clearly before the profession.

I am, Sirs, yours faithfully,
W. E. DIXON.

Pharmacological Laboratory, Cambridge, Jan. 23rd, 1906.

To the Editors of THE LANCET.

SIRS,—In the letter from Dr. W. Martin in your issue of Jan. 20th, I note that your correspondent suggests that too much emphasis is being laid on the physiological testing of drugs and that he disagrees with the suggestion that a central laboratory should be established for such testing. He gives as his reasons: (1) That it has not been proved that bio-chemical methods are of vital importance; and (2) that it has yet to be proved that if they are of vital importance private enterprise and effort are unable to deal with them.

With regard to the first point, I may refer your correspondent to the opinion of Dr. Barger and Dr. W. Vernon Shaw who, in the course of an exhaustive paper on the Chemical and Physiological Assay of Digitalis Tinctures, submitted to the British Pharmaceutical Conference at Sheffield and reported in the "Year Book of Pharmacy, 1904," p. 541, made the following statement as the result of their work: "As yet the only reliable method for the assay of digitalis tincture is the physiological one." Dr. Dixon Mann in the course of last year is reported to have stated that "few medicinal preparations vary so much in activity as do those of digitalis. It is not to be denied that much of the ordinary tincture of digitalis is inert or thereabouts." I think these statements, which could be easily multiplied tenfold, should suffice to cause any conscientious chemist to recognise the importance of standardising such preparations by physiological means.

With regard to the second point, it is practically impossible, at least in this country, for private enterprise and effort to deal with such matters. The testing could only be performed by licensed vivisectioners, and it is essential that it should be performed under proper supervision in public laboratories.—I am, Sirs, yours faithfully,

Exeter, Jan. 22nd, 1906.

H. WIPPELL GADD.

WHY DO ANIMALS CRY IN PAIN?

To the Editors of THE LANCET.

SIRS,—Assuming it is entirely beyond question that the use of communication can be regarded only as a secondary function of the cry of pain I propose to come at once to close quarters with the problem of the primary function of the cry by putting the following question. Has the cry animals utter in consequence of shock (in the form of pain, surprise, fright, &c.) any psychological value because of the sensory stimuli which, so to speak, double back upon the animal's own motor, co-ordinating, and psychical nerve centres, from the muscular movement of the vocal apparatus and from the sounds of the cry?

A first step toward answering this question will be to note the deep-rooted prerogatives which sounds, especially vocal sounds, possess for the stimulation of motor and psychical nerve centres. We may pass by the unique stimulating power of the spoken word because it is intimately bound up with the uses of communication and is exclusively human, and take the sounds of music. Here, at once, human experience and the behaviour of birds under the influence of the music of their family or tribe leave no doubt about the special stimulating power of vocal sounds, whether in musical forms or in the character of broken cries, over motor and psychical functioning. Now the results of zoological research into the genesis of the organs of hearing, in supporting other indications of the prerogatives of vocal sounds over motor and psychical functioning, also, at the same time, distinctly warn us away from the supposition that these prerogatives are a mere consequence of the use of the voice for communication. It is shown that in their rudimentary forms organs of audition

The streets are broader and the houses less high. Large quantities of porter are drunk which suggests a question as to possible relation of this to the ability to suckle children. The whisky was not of the fiery order but was conspicuously advertised as malt. One sees hockey, football, &c., in full swing in the public parks about Dublin on Sunday. I have been induced to state these observations by reading your comment. I had supposed they were matters of common knowledge. I do not attempt any deductions but these observations suggest that inquiry might be fruitful. In conclusion, if the conditions of life in Dublin favour low infantile mortality, why is the death-rate from tuberculosis so high?

I am, Sirs, yours faithfully,

INQUIRER.

Jan. 16th, 1906.

TUBERCULOSIS AND THE NORTHAMPTON BOOT TRADE: A PROPOSED SANATORIUM.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p. 185.)

THE proposal that the town of Northampton should build a popular sanatorium was adopted at a moment when unfortunately several town councillors were absent. Consequently it has been regarded as of the nature of a snatch vote and the council has to some extent gone back upon its decision. Indeed, it is easy to see that the whole question is viewed with considerable apprehension. A great meeting was held at Northampton on Nov. 1st, when Councillor J. Manfield, J.P., a candidate for the Mayoralty, delivered a lengthy speech practically in opposition to the resolution adopted by the town council on Sept. 5th in favour of the erection of a sanatorium. He recognised that corporations had the right to take steps for the prevention of tuberculosis but was in doubt as to what were the best steps. He declared that attempts to deal with this matter by public bodies were in an experimental stage. To this it might be answered that every year some 30,000 patients are received in the sanatoriums created by the German authorities and that this constituted something more than an experiment. Also, it might further be urged that if experiments have to be made surely it is those towns where the disease is exceptionally prevalent that have the more reason to make the first experiments. Against this latter argument it may, however, be objected that it is specially the workers in the boot trade and not the inhabitants of the town as a whole who are disproportionately afflicted with tuberculosis. It might be suggested that before the town as a whole is burdened with the expense of building a sanatorium the owners of the boot factories should be compelled to incur the expense of ventilating their factories properly. The Public Health Act of 1878, as improved by the Act of 1891, places such workshops and factories under the care of the local authority. If the local authority fails to act in this respect the Secretary of State may authorise the factory inspector to take whatever action is necessary and to charge the same to the local sanitary authority. Section 32 stipulates for the maintenance of a reasonable temperature in each workroom and it is not reasonable to expect a worker to sit or stand all day long in the draught caused by an open window. On the other hand, the Act insists on sufficient ventilation and air space. It is impossible to repeat too often that this can only be obtained by mechanical means scientifically applied. The air inlets must be arranged over such an extended surface that the air shall not travel at a greater velocity than about one foot per second. There would, then, be no further complaints as to draughts.

In the meanwhile and before perfect hygiene and ventilation are established in all the factories and workshops many thousand cases of pulmonary tuberculosis will occur for which provision should be made. If in some distant future there is a good time coming when all poverty and insanitary conditions having been abolished there shall be no more tuberculosis, sanatoriums will still be of use as ordinary convalescent homes, or schools, or holiday resorts for children, and many other purposes. Therefore, the hope that in regard to tuberculosis they may ultimately become useless need not retard their immediate construction.

To return to Councillor Manfield and the Northampton corporation, considerable capital is made of the argument that it is more useful to treat advanced cases than those cases which, taken at the earliest stages, offer some hope of cure. The idea, of course, is that the advanced cases spread the disease and that contagion would be prevented if they could be removed from their homes and isolated. But it would be much more satisfactory if it were possible to believe that this argument was purely a scientific argument and was in no wise connected with financial considerations. Councillor Manfield, however, very frankly not only admitted, but even urged as an inducement, that a building for advanced cases might be obtained without great cost just outside the town. Here "simple, plain, comfortable accommodation would be all that would be required," and he had previously insisted that "no elaborate sanatorium would be required for this purpose." While thus betraying how deeply he was actuated by financial considerations, the speaker seemed to forget that the patients themselves would be influenced by quite different feelings. As it is not proposed to employ compulsion, such feelings are of practical importance. Now it is quite obvious that a person still actuated by the boy's hopefulness of youth would gladly leave his friends and go to an "elaborate sanatorium" so as to free himself from the menace of a fatal disease. It is not so certain that a patient in the last stages of a disease which had become incurable would as willingly leave his relatives and friends and go to die in a "simple, plain" hospital for the hopeless. Has it occurred to the advocates of this system to consider for a moment the feelings of those persons who are to be removed to this house for the dying? It is strange to have to recommend the corporation of so advanced a town as Northampton to look for an example on this phase of the question to, for instance, the Danubian principalities. At Bucharest a large sanatorium has been built where in separate buildings and on a vast estate tuberculosis in all its stages is treated. Here care is taken that there shall be nothing to show the patient that his case is considered hopeless. Yet the Roumanians, who have only of recent years become an independent nation, are not wealthy like the inhabitants of Northampton. Nor are they placed in the vanguard of civilisation—a position which British subjects often boast of occupying.

On Dec. 4th last the question came up for discussion once more and the sanitary committee reported to the town council that the purchase of a site and the erection of a sanatorium to hold 40 beds would cost about £14,000. This is £350 per bed, or something like £100 to £150 in excess of the more general estimates. For instance, the very elaborate Basle popular sanatorium at Davos-Platz, where the building materials had to be carried up to a height of over 5000 feet above the sea, cost £263 per bed, and the much more simple Dutch sanatorium, also at Davos-Platz, only cost £150 per bed. The estimate for the yearly outlay seems much more reasonable—namely, £3200, or £80 per annum per bed. Apprehending that a sanatorium would cost too much, the sanitary committee recommended that selected cases should be sent to other sanatoriums already established in the country. The difficulty rests, however, in this very fact that there are hardly any popular sanatoriums in England. If there had been a plentiful supply of such institutions we should not have had the Sandgate scandal. At the Paris International Congress on Tuberculosis the medical officer of health of Brighton, Dr. A. Newsholme, stated that in the London hospitals devoted especially to the treatment of lung diseases there were only 655 beds; in the provinces there were 414 beds, in Scotland 41, and in Ireland 64 beds. As more than 56,000 persons die from pulmonary tuberculosis in Great Britain during the course of the year, neither the hospitals nor the sanatoriums that exist are anything like sufficient to provide the accommodation needed. Therefore Dr. Newsholme had to explain that in England the only action in regard to the removal from their homes and the treatment of cases of pulmonary tuberculosis which had been taken on a sufficiently extensive scale materially to reduce the prevalence of that disease was the reception, and incidentally the isolation, of tuberculous paupers in the workhouse infirmaries. Practically little or nothing else is done in regard to treatment and isolation of cases of pulmonary tuberculosis.

The reduction, amounting to some 50 per cent., in the prevalence of tuberculosis which to our great honour has been realised in this country is the reward of general

sanitary and economic improvements and not of any special measures for the treatment of that disease. Indeed, it is in view of this magnificent result that in criticising the position at Northampton the first care taken was to point out that further sanitary improvements were needed in the trade where an exceptionally large number of cases occurred. If the corporation is so very anxious to avoid spending money, then by far the cheapest way to reduce the prevalence of tuberculosis is to compel the boot manufacturers to warm and to ventilate properly their factories and workshops.

The sanitary committee, having pointed out that it would be very expensive to build a sanatorium, proposed that the Walford-road Borough Hospital, which used to be employed for isolation purposes, should be opened for the reception of ten advanced cases. But Dr. Beatty, the medical officer of health, has pointed out that the number of deaths from pulmonary tuberculosis registered at Northampton in 1904 amounted to 104 and in 1903 to 114. To this Dr. Beatty adds: "The proportion of living consumptives in any one year to those who die in the same period is between three and four to one, therefore in the town during the year 1904 there must have been about 260 cases, and of these 71, or less than 20 per cent., were notified." According to these figures, therefore, it is not ten but about 100 patients who should be removed to a hospital if they have not sufficient house room to isolate themselves in their own homes. As it is the workers in the boot and shoe trade who are the principal victims it is quite obvious that the great majority are not able to isolate themselves properly. Therefore the provision of ten beds for patients to die in is just about the very smallest little bit of tinkering with the subject that could possibly have been attempted.

Even the proposal to build a sanatorium for 40 beds which seems to have caused so great an alarm is altogether inadequate. It would be much cheaper to build a sanatorium for from 100 to 200 beds. The greater the number of beds the greater the extent of the surrounding estate, pine wood forests, &c., if the same sum per bed was spent on the purchase of land. The cost of administration and management is also cheaper per head the larger the number of persons concerned. The figures given show that Northampton itself could supply far more than 40 patients. But there is such a complete dearth of popular sanatoriums in this country that the town council of Northampton could easily obtain from other local authorities patients at a rate which would help to defray the expense incurred. For local authorities to send patients to some speculator who is making a trade of the outdoor treatment of tuberculosis is to incur a very serious responsibility. But it is most natural that the capital of a county should take the initiative and should offer to the surrounding smaller localities the use of a sanatorium built and managed under public control for the public good and not as a private speculation. Such an initiative would receive very wide support and the outlay would be more than recouped by the direct and indirect benefits that would accrue. If this suggestion seems too venturesome and bold there is nevertheless nothing novel or untried about it. For instance, it is now three years since the *Députation Provinciale* or County Council of Liège completed, at a cost of £52,000, its magnificent sanatorium among hills and forest at Borgoumont. Here there are 114 beds and it is a palatial structure situated at an altitude of 415 metres, with a façade of 146 metres, covering 3519 square metres, and with a cube contents or measurement of 23,800 cubic metres. The sun-bathed verandahs, the broad corridors within, the rooms, each with a wall all window space, the majestic valley that stretches out in front, the verdure of the surrounding mountains and forests, the ideal character of the site, the luxury of the building, the excellent results already obtained with the patients, are all things that have to be seen before the puny character of the proposals made to the Northampton town council can be adequately appreciated. Why should Northampton hesitate when Liège has led the way and with so much success? Nor need Northampton be alone in the matter. It would be better to act in consort with the entire county, for a sanatorium is more economical when built on a large scale. Also, an arrangement might be made with some of the friendly societies. It would be to their financial advantage to pay for the keep and treatment of some of their members in a sanatorium. But even if the cost of the maintenance of

all the patients was paid for out of the rates that cost would be reduced if it came from the rates of more than one borough or locality. Then it must be borne in mind that whatever is done in this direction will tend first and foremost to reduce the sum total of human suffering; secondly, it will increase the labour capacity and therefore the wealth of the community; and, finally, it will bring about a reduction in the poor rates. Of course, it is obvious that the building of a sanatorium does not alone suffice. At least, four different sorts of institutions are needed. First, there should be a dispensary and investigation department combined. To this a large staff of voluntary workers should be attached. Their mission would be to find out where the sanitary laws which help to prevent tuberculosis are not applied and to get evidence against the delinquents. Then they should discover cases of tuberculosis and bring them to the dispensary where the medical officer would examine them and decide what was to be done. In this respect there should be at least three different methods available. First the preventive method, applicable especially to children, consisting of out-of-door schools and treatment, such as exist already at Berlin and many other towns, especially in Germany. Then, secondly, the curative out-of-door treatment for cases in the earliest stages, that is to say, the sanatorium proper. Thirdly, there should be the hospital treatment for the advanced and almost hopeless cases and the chief advantage secured here is the isolation of patients at the time when they are most likely to spread the disease. The special anti-tuberculosis dispensary serves then to discover and to sift the cases; to decide to which of the three great divisions in treatment they properly belong. It also serves as a centre from which the patients who have come back from the sanatorium can be watched and made to carry out strictly the instructions which they have received. This is a somewhat wider programme than the provision of ten beds in a disused hospital for infectious diseases; and this is what Northampton and other English towns will have to do if they wish to be on a level with Berlin and many other continental towns and cities.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE second term of the winter session commenced on Jan. 16th and all departments are again in full work. Unfortunately, the Principal, Sir Oliver Lodge, is absent. He was seized during the holidays with an attack of influenza character which confined him to bed for a considerable time and when he became convalescent his medical advisers insisted that he must go to Italy for several weeks.—The anatomical department has lost Dr. W. Wright who has been appointed lecturer on anatomy at the *Middlesex Hospital*. Dr. Wright came to Birmingham about five years ago, being appointed from the junior demonstratorship of anatomy in the Owens College to the senior demonstratorship in Birmingham. During his tenure of office he made many friends who now regret his departure and are preparing to celebrate his advance to an independent post by a complimentary dinner to be given during the course of next month.—A long-felt want in Birmingham is about to be satisfied by the erection of a 300-ton testing machine in the engineering department in the new buildings at Bournebrook. The money for this great instrument was secured by the energy of Mr. Joseph Chamberlain, the Chancellor of the University, and the acquisition of the instrument will be greatly appreciated by the manufacturers in the neighbourhood.

Local Charities.

The will of the late Mr. Probin Ward provides for the division of £550 between the following 11 local charities, £50 to be given to each: The Birmingham General Hospital, the Queen's Hospital, the Orthopaedic Hospital, the Eye Hospital, the Children's Hospital, the Ear and Throat Hospital, the Blue Coat School, the Institution for the Blind, the Institution for the Deaf and Dumb, the Women's Hospital, and the Birmingham Dispensary; and the late Mr. William Robert Lane has left £1000 each to the Birmingham General Hospital, the Queen's Hospital, and the Children's

Hospital.—An attempt has been made to start an agitation for bringing the hospitals under municipal control by a complaint, published in the correspondence columns of a local paper, that the nurses in one of the hospitals were overworked and by a suggestion that their working hours should be limited to eight. The writer urged that other reforms were also necessary but, as is usual with agitators, he overstated his case by asserting that at the present time the hours were 12½ and 11½ on alternate days, whilst the reply of the secretary of the hospital shows that the staff nurses work 10 hours, the assistant nurses 10 and 10½ hours, and the probationers 10 and 11 hours on alternate days.—The quarterly report of the Birmingham and Midland Eye Hospital demonstrates that the institution is doing a very large amount of useful work. The total number of patients under observation during the period was 6846, of which 261 were in-patients and 6385 were out-patients. Over 2000 out-patients and 73 in-patients were treated without tickets on account of their urgent need. During the quarter 329 operations were performed, 65 patients were provided with glass eyes, and 2480 with spectacles.

The City of Birmingham Aid Committee.

In the past it has been the custom in Birmingham, as in many other cities, that each of the local mutual aid societies should have its own organisation. Where centralisation occurred it was merely for the purpose of keeping the various organisations in touch with each other. It has now been decided to form a combination consisting of a central body of which the various mutual aid societies will form branches. The work in future will be carried out by a central executive committee, seven branch committees working in different sections of the city, and as many district helpers' committees as may be necessary for the proper working of each branch. The executive council will consist of the Lord Mayor, as president, if he is willing to serve; the chairman, the honorary secretaries and treasurers of the branch committees; two additional representatives from each branch committee; a representative from each of the Birmingham, Aston, and King's Norton boards of guardians; a representative of the distress committee under the Unemployed Workmen's Act, 1905; a representative of the Charity Organisation Society; a representative of the Women's Settlement; a representative of the Birmingham trades council; and other persons possessing special knowledge, co-opted from time to time by the council. The funds are to be raised by a finance committee consisting of the honorary treasurers of the branches and they will be controlled by the executive council. The step which has been taken is expected to be more than fully justified, for, as a result, the work will be better organised and controlled and subscribers to the funds will be able to feel certain that everything will be well managed. The scheme corresponds with the Elberfeld system in many respects but it is not quite so democratic.

Underfed Children.

Some misunderstanding and a little friction have arisen in the district in association with underfed children and the chairman of the Birmingham School Cheap Dinner Society, the Rev. E. F. M. McCarthy, has written to the Birmingham and Aston boards of guardians stating that the business committee of his society has decided to discontinue the supply of dinners for the present and, further, that his committee desires to point out to the guardians that the scheme they are working in conjunction with Mr. Hookham will leave a large number of underfed children without a meal. Some of the members of the Aston board were of opinion that the Act did not give them all the powers they desired, but both boards were convinced that they had done what they could. Up to the present the Birmingham board had only received 800 applications, whilst the education authorities estimated that 2600 children were underfed; but it was pointed out that some parents who were neglectful in the past have, under the threat of being sued for the necessary money, undertaken to feed their children. It would be very regrettable if the children suffered from misunderstandings between different organisations, but it is quite time that many parents should be forced to recognise their responsibilities.

Cottage Homes for Boys.

It appears, from a discussion which occurred at a recent meeting of the King's Norton board of guardians, that the system of cottage homes in the Birmingham district is

proving a distinct success. Apparently the majority of the boys sent to the homes do well in after life, and the statement of the chairman of the cottage homes committee that although they drew their children largely from the gutter not more than 1 per cent. ever came back to the workhouse is very encouraging. The cost of cottage homes is slightly in excess of the boarding-out system but the results on the whole appear to justify the expense.

Lightwoods Park and Warley Woods.

The scheme for the acquisition of Lightwoods Park and Warley Woods is still progressing, though not perhaps so quickly as its promoters could desire. A sum of £70,000 is required and of this £28,000 are still to be obtained. The staff of the University has contributed over £51, and of the total sum hitherto secured £40,000 have been given by 600 people. The question of a contribution from Birmingham has received preliminary consideration by the general purposes committee and there seems to be a possibility that a substantial contribution may be recommended on the principle of securing as many public recreation grounds as possible in the immediate neighbourhood. It has been pointed out, however, that as the woods are outside Birmingham and immediately contiguous to Smethwick and Oldbury it would be well that those places should lead the way with larger contributions than they have hitherto promised.

Jan. 23rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday in Liverpool.

FINE weather favoured the thirty-sixth Hospital Sunday collection which took place in the Liverpool churches on Jan. 14th. It cannot be said that in previous years the elements had been propitious. "Hospital Sunday weather" was fast becoming a synonym for all that was most inclement and disagreeable. Despite this most auspicious circumstance the results are not calculated to give unqualified satisfaction. Whilst many churches have increased their collections the majority have fallen. The decline is most noticeable in the case of those places of worship which are attended by wealthy congregations. The two most striking instances are Sefton Park Presbyterian Church (where the collection showed a falling off of £90) and St. Nicholas's Church, Blundellsands (where there was a drop of £50). The decrease at the latter church is difficult to account for but the falling off at Sefton Park Presbyterian Church may very safely be attributed to the fact that the Rev. Dr. John Watson (Jan MacLaren) no longer occupies the pulpit there, and that no regular minister has yet been appointed. The first place is again accorded to Ullet-road Unitarian Church, where the receipts showed a considerable increase over last year—£610 as against £552.

The West Kirby Appeal Case.

In the Court of Appeal on Jan. 23rd, before Lords Justices Vaughan Williams and Stirling, the hearing of the appeal of Dr. A. Bicknell of West Kirby against a judgment in favour of the plaintiff Hobson entered at the trial at the Liverpool assizes in May last was concluded. It will be remembered that the jury found that the defendant was wrong and guilty of negligence in his original diagnosis of the disease from which the plaintiff was suffering but that he afterwards acted with all care, and they awarded the plaintiff £70 for loss of wages and "tips" at the Golf Club. Lord Justice Vaughan Williams, in giving judgment, said that the question which the court had to decide was whether the defendant was negligent in the diagnosis which he made when he was called in to treat the plaintiff; and, secondly, whether the result that followed—that was to say, the dismissal of the plaintiff from his employment at the club—was brought about or caused by such a negligent diagnosis. The jury found that the defendant was negligent inasmuch as he accepted the diagnosis of Dr. Moss (who first examined the plaintiff) without sufficient examination but that subsequently he used all reasonable care. There was, in his lordship's opinion, a manifest difficulty in reconciling this finding with the verdict against the weight of evidence he should not have been inclined to interfere but

the question was whether the damages followed from the negligence. It was clearly shown that the plaintiff was dismissed as the result of a subsequent re-examination and it therefore was only possible to support the finding as to damages on the assumption of negligence subsequent to the first diagnosis, but there was an express finding of the jury that the defendant subsequently used all reasonable care and that being so it could not be said that the damages followed from negligence. For those reasons there must be judgment for Dr. Bicknell, the defendant. Lord Justice Stirling concurred and the appeal was allowed and judgment entered for the defendant, with the general costs of the trial, the plaintiff to have the costs of the issue on which he succeeded. Dr. Bicknell is to be congratulated on the result of the appeal.

Insanitary Swearing-in: a Medical Officer of Health's Objection at the Birkenhead Police Court.

Dr. R. Sydney Marsden, the medical officer of health of Birkenhead, giving evidence at the Birkenhead police court on Jan. 19th in a "bad meat" case, objected to the dirty condition of the Bible which was offered to him for swearing-in purposes. He respectfully suggested that it was time the magistrates should order a new Bible to be provided. The book was not in a sanitary condition and witnesses should not be asked to kiss it. As medical officer of health he thought it his duty to call attention to it. The deputy town clerk facetiously remarked that Dr. Marsden had better serve a notice on the magistrate to abate the nuisance. On being asked if he wished to have the book condemned Dr. Marsden, holding it up between his finger and thumb, remarked that he certainly should like an order for its destruction. The chairman said the matter would be attended to.

Small-pox in Liverpool: Russian Emigrants Isolated.

At the weekly meeting of the health committee Dr. E. W. Hope (medical officer of health) reported that there were 758 cases in hospital, including two cases of small-pox—Russian emigrants en route to America and now in the port sanitary hospital.
Jan. 25rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

School Influence in the Spread of Diphtheria.

At the meeting of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health held at Chepstow on Jan. 19th the President of the branch (Dr. Francis T. Bond) gave an account of the successful action which he recently took in connexion with an epidemic of diphtheria in the Thornbury rural district of Gloucestershire. For some months cases of the disease were regularly occurring among school children in one portion of the district until it appeared that some decided steps must be taken to put an end to the outbreak. As the centre of infection was apparently the public elementary school material was taken from the throat and nose of each of the 246 children who attended the school. Upon bacteriological examination it was found that Klebs-Loëffer bacilli were present in 65 per cent. of the children examined, the bacilli being found in the nasal specimens to double the extent of that in specimens taken from the throat. The school was kept open and for three weeks the throats and noses of all the children in the school were sprayed with a solution of carbolic acid and no further cases of the disease have been reported. The spraying and the swabbing were carried out by a local practitioner at the cost mainly of the rural district council and it is of interest to learn that when the education committee of the county council was asked to pay for the services thus rendered it replied that it had no authority to spend money in this way. Dr. Bond endeavoured to ascertain from the Local Government Board whether the local sanitary authority could properly pay for what he described as the "disinfection" of diphtheria throats. The Board replied that the authority had no express power to spend money for this purpose but it would be for the district auditor to say whether the payments were illegal.

Suggested Amendment of the Rules of the Central Midwives Board.

At the same meeting of the society Dr. J. Middleton Martin suggested some amendments to the rules of the

Central Midwives Board with special reference to those regulating the practice of midwives. He considered it inadvisable that women ignorant of their use should be obliged to carry catheters, appliances for giving injections, &c., for to some women the obligation to carry them implied that the appliances *must* be used. The rule which requires personal disinfection of the midwife after attendance upon a case of puerperal fever should be made more imperative and should be so worded as to make it clear that steam disinfection is really necessary. The rule which insists that a midwife shall not leave her patient after the commencement of the second stage Dr. Martin thinks is unfortunately expressed because many midwives do not know the meaning of such terms as presentation, second stage, &c. The rule which gives a qualified assent to the making of an internal examination by midwives he condemned and thought that they should be prohibited from making such examinations until after their methods of practice had been personally watched. As midwives in some districts only attend half a dozen or so of cases in a year it seemed desirable that the supervising authority should have discretion in enforcing the rule which prohibits the midwife laying out the dead, and some hardship might be entailed if she were not allowed to perform this office in the event of the death of either the patient or the baby. These were the most important amendments suggested and in the course of discussion Dr. A. G. Lawrence pointed out that it was really necessary to differentiate between rules for the trained and untrained midwives, for much harm would be done if weapons were put into the hands of untrained nurses with the use of which they were not familiar. He expressed the opinion, as a general practitioner of 45 years' standing, that no untrained midwife could tell a presentation or knew the meaning of the different stages of labour.

Eastern Dispensary, Bath.

The annual meeting of the subscribers to this institution was held on Jan. 18th under the presidency of the Mayor. The medical report stated that 3656 patients had been treated during the year. The financial statement showed that the year closed with an unfavourable balance of £46.

Bristol Medical Dramatic Club.

The Bristol Medical Dramatic Club will give performances of the *Pickpocket* on Feb. 13th and four following days. The proceeds will be devoted towards the purchase of an athletic ground for the Bristol Medical Clubs Union.
Jan. 25rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Morison Lectures at the Royal College of Physicians of Edinburgh.

THESE lectures are to be delivered in the College Hall on Wednesday, Jan. 24th, Friday, Jan. 26th, and Monday, Jan. 29th. The lecturer is Dr. W. Ford Robertson, superintendent of the Scottish Asylums Laboratory, and his theme is the Pathology of General Paralysis of the Insane. Lecture I. deals with "the prevalence and recent increase of general paralysis, current opinions regarding its causation, recent investigations in the Laboratory of the Scottish Asylums and Edinburgh Royal Asylum, bacteriological, histological and experimental researches; the detection of diphtheroid bacilli in the blood, walls of the cerebral vessels, cerebro-spinal fluid, and urine." Lecture II. includes "the experimental study of the action of the living blood upon pure cultures of diphtheroid bacilli isolated from cases of general paralysis and tabes dorsalis; how the results obtained have led to the demonstration of the infective nature of these diseases; search for a specific reaction of the blood in cases of general paralysis." The concluding lecture is confined to "the etiology and pathogenesis of general paralysis and tabes dorsalis. How are these diseases to be combated?"

The Parliamentary Representation of the Universities of Edinburgh and St. Andrews.

The voting papers for the election of a member to represent these Universities in the new Parliament have just been issued. The papers have to be in the hands of the registrar duly signed and witnessed by Feb. 8th. The names of the candidates and the sides of politics to which they

adhere are matters of common knowledge to readers of the daily newspapers.

Women Graduates and the Election of University Parliamentary Representatives.

An interesting point has just arisen in connexion with the election of Parliamentary representatives for the Scottish universities. The point is that women graduates are on the registers of the general councils of the universities and they claim that voting papers should be sent to them. They hold that there is nothing in the Act regulating the universities' elections which distinctly debars them from the privilege and that the duty of the registrars is "to forward to each voter, to his address as entered in the register of the general council of the University, who shall appear from said address to be resident within the United Kingdom and the Channel Islands," the necessary voting paper. The registrars have not taken this view and they are said to be guided by high legal opinion on the matter. The statute dealing with the elections says that "no person subject to any legal incapacity shall be entitled to vote at any election or exercise any other privilege as a member of the general council of any university," and from this the registrars maintain that the women graduates come under the category of those who are "subject to legal incapacity." A meeting of women graduates of the Scottish universities to consider the position has been called for the 27th inst. to be held in Edinburgh. The matter is meanwhile in the hands of a provisional committee of which Miss C. Macmillan is secretary. There is now a large number of graduates in arts and medicine interested in this question and more will doubtless be heard of it.

Royal Medical Society, Edinburgh.

A meeting of this society was held on Jan. 19th, Dr. A. W. Neill being in the chair, when Dr. D. Newman of Glasgow gave a demonstration on Cystoscopy. The lecturer first showed how in cases of disease of the kidney and bladder differential diagnosis is frequently impossible without the aid of the cystoscope, and thereafter, by means of a special apparatus for the purpose, he showed a number of interesting pictures of the appearances of the bladder in health and disease. Dr. Newman, by an ingenious device, demonstrated the appearance produced by normal urine, pus, blood, &c., passing into the bladder from the ureter; and he explained the mechanism of the cystoscope which he uses and which shows a number of improvements on the ordinary instrument, notably a double eye-piece, with the aid of which Dr. Newman had succeeded in obtaining excellent drawings of bladder conditions. On the motion of Dr. Chambers, seconded by Dr. Wells, the lecturer was unanimously accorded a very hearty vote of thanks for his most interesting demonstration. The presidents of the society have issued invitations to their annual dinner which is to be held on Wednesday, Feb. 7th. Professor T. Olifford Allbutt is to be the guest of the evening.

Scottish Branch of Queen Victoria's Jubilee Institute for Nurses.

The seventeenth annual report of this admirable and useful institution shows continued success. Owing to the resignation of the superintendent, Miss Wade, on account of her health, Miss Cowper has been promoted to fill her post. During the year with which the report deals the council was responsible for 41 nurses and probationers. There are now 268 Queen's nurses in Scotland working under 174 affiliated branches; and the last report of the council of the institute gives the number in England as 672 in 335 branches, in Wales 100 in 75 branches, and in Ireland 94 in 81 branches. As the report says, the fact that the nurses of the institute are to be found in districts ranging from a crowded manufacturing town to a sparsely peopled Highland estate "is an encouraging evidence of the adaptability of the system of nursing recommended by the institute."

The Eyesight of School Children.

The London County Council led the way in the matter of making a systematic examination of the eyesight of school children and Glasgow and Govan school boards have been following its example. In an interesting paper read before the Royal Philosophical Society Dr. W. B. Inglis Pollock summarised some of the results obtained by a routine examination of the eyes of scholars in three schools under the Govan board. In one school there were 8.2 per cent. with

defective vision and 21.6 with fair vision; in another the corresponding figures were 9.2 and 12.7 per cent.; and in the third they were 22.2 and 30.3 per cent. Taking the three schools together, the defective percentage remained very constant for the young children, and then gradually fell during the ages of ten to 14 years, when it increased very rapidly. Dr. Pollock pointed out that 12 per cent. of all scholars had hypermetropic astigmatism, which meant that by the age of 35 years all such individuals would need to use glasses for near work. Many workmen of that age stated that they would be thrown out of employment if they put on glasses but Dr. Pollock thought this was a mistaken policy on the part of the employers, as in engineering works men would be better protected with glasses from "fires" and chips of steel, and thus companies would save the money paid in compensation for the time men were off work being treated for ulcers and wounds of the eye. As matters now stand, however, it was advisable that hypermetropic boys should be warned not to enter upon trades where they were likely to lose their employment at an early age, and the only way to detect such cases was by a systematic examination of all boys on leaving school. Among 3183 children 71 had squints. The percentage of myopia began as 1.7 at the age of five years, rose steadily to 8.4 at 13 years of age, and thereafter rose with a bound to 25 at 18 years of age. These statistics need no comment.

Jan. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Election of a Direct Representative for Ireland on the General Medical Council.

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Public Health of Dublin.

The last meeting of the public health committee of the corporation took place on Jan. 17th when Sir Charles A. Cameron reported that the death-rate was very low during the previous two weeks as compared with the corresponding period of the last ten years. The general death-rate was 23.3 as against an average of 33.7 per 1000. The zymotic death-rate was 0.9 per 1000 as against 2.9 for the corresponding period of the previous ten years. Of the total number of deaths no less than 52, or nearly one-third, were among children under five years of age and of these a majority had not reached one year. The last meeting of the governors of Cork-street Fever Hospital took place on Jan. 18th, when the medical superintendent reported that a large number of severe cases of pneumonia and erysipelas were admitted during December, also cases of diphtheria and scarlet fever, while the number of cases of enteric fever had decreased. With reference to a proposed sanatorium for consumption at a meeting of the corporation held on Jan. 22nd Sir Charles Cameron received the permission of the public health committee to convene a meeting of the representatives of the urban and district councils of the county of Dublin to consider the subject of the establishment of a sanatorium for the treatment of consumption.

Death of Dr. Henry S. Purdon.

I regret to announce the death on Jan. 21st, after a painful and tedious illness, of Dr. H. S. Purdon of Belfast at the age of 62 years. The son of a former well-known medical

practitioner in Belfast—Dr. C. D. Purdon—Dr. H. S. Pardon studied in Belfast, Dublin, and Glasgow, where he graduated M.D. in 1865, and in the same year he became L.R.C.P. of Edinburgh, having also in the previous year become a Licentiate of the Royal College of Surgeons in Ireland. After commencing practice in Belfast, he became physician to the old Royal Hospital, a position which he resigned on being appointed certifying factory surgeon for Belfast in succession to his father—a lucrative post. He was also physician to the Belfast Charitable Society and to the Forster Green Hospital for Consumption and Diseases of the Chest. He opened a dispensary for skin diseases in 1865, which subsequently, owing to the munificence of the late Mr. Edward Benn of Belfast, developed into the Skin Hospital with 18 beds. For many years he was the leading Ulster medical authority on cutaneous diseases and wrote many papers on the subject and was also for a time editor of a "Journal of Cutaneous Medicine." Dr. Pardon was fond of music and antiquities and at one time was a member of the choir of St. George's Church, Belfast. He was a genial and kind hearted man with many friends among the profession and the public. He leaves a widow, three sons (two of whom are medical men), and five daughters.

Longford County Infirmary.

An unfortunate state of affairs has arisen at Longford County Infirmary through the existence of serious differences of opinion between the medical officer and the committee of management. In his monthly report presented at a meeting of the committee held on Jan. 17th, Mr. Nathaniel Mayne, the medical officer, complained that certain extra duties recently assigned to him would require him to be in constant attendance at the infirmary and would thereby preclude him from undertaking private practice. A published report of the events of this meeting shows that the committee in sanctioning or refusing the supply of medical and surgical appliances takes the advice not of Mr. Mayne but of the matron and the registrar. In a letter published in the *Irish Times* of Jan. 19th Mr. Mayne makes a very reasonable reply to a charge made against him of admitting patients without tickets, his explanation being that the applicants for admission were too ill to be sent away.

Jan. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Professional Secrecy and the Examination of Prostitutes.

At the meeting of the Society of Legal Medicine held on Jan. 8th M. Batte said that one argument employed by those who objected to the State examination of prostitutes was that the medical men whose duty it was to carry out the examinations could not legally fulfil such duties. They could not, because in sending in to the authorities the diagnosis of the diseases which they found in the women who came to them they had to violate their oath of professional secrecy. M. Batte argued that no violation existed. The medical men who are attached to the particular department in question of the State are not, so far as these duties go, practising medical men. They act simply as experts and as delegates of the prefect of police just in the same way as do inspectors of wet nurses. The woman who comes to any one of them does not confide in him, she knows that she goes to be examined and why she does so. This being so there is no secrecy about the matter and, consequently, no violation of secrecy.

Bilateral Tarsectomy for Double Club Foot.

At the meeting of the Surgical Society held on Jan. 8th M. Broca read for M. Jeanbrau a paper dealing with the case of a young man, aged 23 years, who suffered from double club foot due to paralysis. M. Jeanbrau had obtained a good result by performing an extensive tarsectomy on either side, several bones being removed. M. Broca thought that a good result might always be looked for in such cases, at least in the adult. The case reported by M. Jeanbrau was, however, a striking example of the good results to be obtained by putting up the foot after tarsectomy in an immobile apparatus after having previously placed it in good position. The apparatus was not removed until the foot had become fixed in the new position. In the case in question one foot had been immobilised and the other had been treated by gentle movements

and early massage. A much better result was obtained in the immobilised foot than in the other one.

Administration of Drugs by Night.

At a recent meeting of the Therapeutical Society M. René Laufer drew attention to a fault of omission which is very common in the use of drugs. The general custom is to give drugs by day, generally at meal times, and no notice is taken of the fact that it would be quite possible to vary the time of giving them with good results. A large number of pathological conditions occur at night, such as asthma and epileptic fits; others are increased at night, such as syphilitic pains. Others which go on steadily all the 24 hours are only treated during the day, that is to say, during half the time of their existence. To this pathology of the night it is only reasonable to oppose a therapy of the night. As in the case of certain fevers quinine is not given at meal times but at certain definite periods before the access of the fever, so in pathological conditions the administration of the selected medicine ought to be given at not too long a period before the manifestation of the attack. M. Laufer related five cases in support of his argument, one being a case of asthma where iodide given at night entirely prevented the attack although the same dose given by day had no effect in preventing the attacks. M. Laufer has used the same method of administration of drugs in certain cases of neuralgia and bronchitis. He noted that when a drug is given at night its activity is markedly increased on account of the rapidity of absorption. In practice he finds that the best method of administering drugs at night is to divide them into two doses, one to be given on going to bed and the other in the middle of the night.

Cervical Actinomycosis.

At the meeting of the Society of Dermatology and Syphilography held on Jan. 11th M. Pantrier showed a patient who was an agriculturist and who had been in the habit of chewing ears of grasses. In September, 1903, he presented a tumour at the angle of the jaw on the left side in which were found the characteristic yellow granules of actinomycosis. To remove it a portion of the angle of the jaw had to be taken away as well. Four months later cutaneous lesions began to develop in the neck and here also were found actinomycotic granules. Treatment by iodides had not so far brought about any improvement.

Jan. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Experiments on Syphilis.

Professor Neisser of Breslau, together with his assistants, Dr. Baermann and Dr. Halberstädter, has visited Batavia, in the island of Java, for the purpose of studying the inoculation of apes and monkeys with syphilis and a lengthy report of his work has been published by him in the *Deutsche Medizinische Wochenschrift*. Orang outangs, gibbons, and macaques were used for these experiments, the virus being taken from hospital patients. It was found that the incubation period varied from 15 to 65 days, in the majority of cases being from 26 to 45 days. The virus was inoculated into scarifications. The primary chancre which subsequently appeared varied considerably in superficial extent and in depth but, as a rule, was very like human chancre. Virus taken from recent chancres produced more characteristic symptoms than other virus, that from chancre in the course of healing did not produce any positive results, whilst the effects of those from primary adenitis, condylomata, and plaques muqueuses were marked. Material taken from a gummata produced chancre in two out of three cases and it was remarkable that the incubation period in these cases was exceptionally long. Inoculation of human blood and blood serum proved negative and of the organs only the spleen, the glands, the bone marrow, and the testicles gave positive results. Professor Neisser says that he is not sure whether there is a difference in the virulence of the infective material according as it is taken from the human subject, from the orang-outang, or from lower monkeys, but apparently the virus became stronger by passage through different animals. It is remarkable that the higher species of monkeys are more liable to syphilis than the lower and that in the higher species the virus may be successfully inoculated in every region of the body, while in the lower species the inoculation takes effect only in the eyebrows and in the

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The last meeting of the public health committee of the corporation took place on Jan. 17th when Sir Charles A. Cameron reported that the death-rate was very low during the previous two weeks as compared with the corresponding period of the last ten years. The general death-rate was 23.3 as against an average of 33.7 per 1000. The zymotic death-rate was 0.9 per 1000 as against 2.9 for the corresponding period of the previous ten years. Of the total number of deaths no less than 52, or nearly one-third, were among children under five years of age and of these a majority had not reached one year. The last meeting of the governors of Cork-street Fever Hospital took place on Jan. 18th, when the medical superintendent reported that a large number of severe cases of pneumonia and erysipelas were admitted during December, also cases of diphtheria and scarlet fever, while the number of cases of enteric fever had decreased. With reference to a proposed sanatorium for consumption at a meeting of the corporation held on Jan. 22nd Sir Charles Cameron received the permission of the public health committee to convene a meeting of the representatives of the urban and district councils of the county of Dublin to consider the subject of the establishment of a sanatorium for the treatment of consumption.

Death of Dr. Henry S. Purdon.

I regret to announce the death on Jan. 21st, after a painful and tedious illness, of Dr. H. S. Purdon of Belfast at the age of 62 years. The son of a former well-known medical

practitioner in Belfast—Dr. C. D. Purdon—Dr. H. S. Purdon studied in Belfast, Dublin, and Glasgow, where he graduated M.D. in 1835, and in the same year he became L.R.C.P. of Edinburgh, having also in the previous year become a Licentiate of the Royal College of Surgeons in Ireland. After commencing practice in Belfast, he became physician to the old Royal Hospital, a position which he resigned on being appointed certifying factory surgeon for Belfast in succession to his father—a lucrative post. He was also physician to the Belfast Charitable Society and to the Forster Green Hospital for Consumption and Diseases of the Chest. He opened a dispensary for skin diseases in 1865, which subsequently, owing to the munificence of the late Mr. Edward Benn of Belfast, developed into the Skin Hospital with 18 beds. For many years he was the leading Ulster medical authority on cutaneous diseases and wrote many papers on the subject and was also for a time editor of a "Journal of Cutaneous Medicine." Dr. Purdon was fond of music and antiquities and at one time was a member of the choir of St. George's Church, Belfast. He was a genial and kind-hearted man with many friends among the profession and the public. He leaves a widow, three sons (two of whom are medical men), and five daughters.

Longford County Infirmary.

An unfortunate state of affairs has arisen at Longford County Infirmary through the existence of serious differences of opinion between the medical officer and the committee of management. In his monthly report presented at a meeting of the committee held on Jan. 17th, Mr. Nathaniel Mayne, the medical officer, complained that certain extra duties recently assigned to him would require him to be in constant attendance at the infirmary and would thereby preclude him from undertaking private practice. A published report of the events of this meeting shows that the committee in sanctioning or refusing the supply of medical and surgical appliances takes the advice not of Mr. Mayne but of the matron and the registrar. In a letter published in the *Irish Times* of Jan. 18th Mr. Mayne makes a very reasonable reply to a charge made against him of admitting patients without tickets, his explanation being that the applicants for admission were too ill to be sent away.

Jan. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Professional Secrecy and the Examination of Prostitutes.

At the meeting of the Society of Legal Medicine held on Jan. 6th M. Biette said that one argument employed by those who objected to the State examination of prostitutes was that the medical men whose duty it was to carry out the examinations could not legally fulfil such duties. They could not, because in sending in to the authorities the diagnosis of the diseases which they found in the women who came to them they had to violate their oath of professional secrecy. M. Biette argued that no violation existed. The medical men who are attached to the particular department in question of the State are not, so far as these duties go, practising medical men. They act simply as experts and as delegates of the prefect of police just in the same way as do inspectors of wet nurses. The woman who comes to any one of them does not confide in him, she knows that she goes to be examined and why she does so. This being so there is no secrecy about the matter and, consequently, no violation of secrecy.

Bilateral Tarsectomy for Double Club Foot.

At the meeting of the Surgical Society held on Jan. 6th M. Broca read for M. Jeanbrau a paper dealing with the case of a young man, aged 23 years, who suffered from double club foot due to paralysis. M. Jeanbrau had obtained a good result by performing an extensive tarsectomy on either side, several bones being removed. M. Broca thought that a good result might always be looked for in such cases, at least in the adult. The case reported by M. Jeanbrau was, however, a striking example of the good results to be obtained by putting up the foot after tarsectomy in an immobile apparatus after having previously placed it in good position. The apparatus was not removed until the foot had become fixed in the new position. In the case in question one foot had been immobilised and the other had been treated by gentle movements

and early massage. A much better result was obtained in the immobilised foot than in the other one.

Administration of Drugs by Night.

At a recent meeting of the Therapeutical Society M. René Lauffer drew attention to a fault of omission which is very common in the use of drugs. The general custom is to give drugs by day, generally at meal times, and no notice is taken of the fact that it would be quite possible to vary the time of giving them with good results. A large number of pathological conditions occur at night, such as asthma and epileptic fits; others are increased at night, such as syphilitic pains. Others which go on steadily all the 24 hours are only treated during the day, that is to say, during half the time of their existence. To this pathology of the night it is only reasonable to oppose a therapy of the night. As in the case of certain fevers quinine is not given at meal times but at certain definite periods before the access of the fever, so in pathological conditions the administration of the selected medicine ought to be given at not too long a period before the manifestation of the attack. M. Lauffer related five cases in support of his argument, one being a case of asthma where iodide given at night entirely prevented the attack although the same dose given by day had no effect in preventing the attacks. M. Lauffer has used the same method of administration of drugs in certain cases of neuralgia and bronchitis. He noted that when a drug is given at night its activity is markedly increased on account of the rapidity of absorption. In practice he finds that the best method of administering drugs at night is to divide them into two doses, one to be given on going to bed and the other in the middle of the night.

Cervical Actinomycosis.

At the meeting of the Society of Dermatology and Syphilography held on Jan. 11th M. Pautrier showed a patient who was an agriculturist and who had been in the habit of chewing ears of grasses. In September, 1903, he presented a tumour at the angle of the jaw on the left side in which were found the characteristic yellow granules of actinomycosis. To remove it a portion of the angle of the jaw had to be taken away as well. Four months later cutaneous lesions began to develop in the neck and here also were found actinomycotic granules. Treatment by iodides had not so far brought about any improvement.

Jan. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Experiments on Syphilis.

Professor Neisser of Breslau, together with his assistants, Dr. Baermann and Dr. Halberstädter, has visited Batavia, in the island of Java, for the purpose of studying the inoculation of apes and monkeys with syphilis and a lengthy report of his work has been published by him in the *Deutsche Medizinische Wochenschrift*. Orang outangs, gibbons, and macaques were used for these experiments, the virus being taken from hospital patients. It was found that the incubation period varied from 15 to 65 days, in the majority of cases being from 26 to 45 days. The virus was inoculated into scarifications. The primary chancre which subsequently appeared varied considerably in superficial extent and in depth but, as a rule, was very like human chancre. Virus taken from recent chancres produced more characteristic symptoms than other virus, that from chancre in the course of healing did not produce any positive results, whilst the effects of those from primary adenitis, condylomata, and plaques muqueuses were marked. Material taken from a gumma produced chancre in two out of three cases and it was remarkable that the incubation period in these cases was exceptionally long. Inoculation of human blood and blood serum proved negative and of the organs only the spleen, the glands, the bone marrow, and the testicles gave positive results. Professor Neisser says that he is not sure whether there is a difference in the virulence of the infective material according as it is taken from the human subject, from the orang-outang, or from lower monkeys, but apparently the virus became stronger by passage through different animals. It is remarkable that the higher species of monkeys are more liable to syphilis than the lower and that in the higher species the virus may be successfully inoculated in every region of the body, while in the lower species the inoculation takes effect only in the eyebrows and in the

genitals. This local immunity of macaques could not be overcome either by inserting the virus into artificial wounds of the skin or by combining the syphilitic virus with vaccine. With regard to the course of the disease it was found that in the lower monkeys the animal's general state was not at all altered, whilst in orang-outangs dyspepsia, dysentery, and debility showed themselves. Primary adenitis was observed only in the anthropoid apes; in the lower species glandular changes were not perceptible until the necropsy was made. As to the secondary symptoms, papular exanthemata were observed in some of the gibbons on the face, on the abdominal and gluteal regions, on the hands, and on the mucous membranes. In the orang-outang no secondary symptoms developed; in the lower monkeys there were local eruptions of annular and serpiginous form in the neighbourhood of the primary chancre. Professor Neisser further states that he was unable to produce syphilis by subcutaneous injection, either in gibbons or orang-outangs or lower monkeys, nor was immunity obtained by these injections. The virus is therefore obviously destroyed in the subcutaneous tissue of a healthy animal, but possibly subcutaneous injections of the virus into a syphilitic animal may produce immunising antitoxins. The experiments are, however, not yet finished. Injections into the blood-vessels and into the peritoneal cavity were also unsuccessful. It was found that the virus lost its efficacy within six hours; material taken from a dead body after 18 hours was inert and attempts to preserve it by means of glycerine, paraffin, and other substances were unsuccessful. Experiments were also carried out for the purpose of ascertaining whether the development of syphilis could be cut short by excision of the place of the injection at varying intervals previously to the appearance of the chancre, the result being that the chancre developed in eight out of 14 cases. In two cases there was no formation of chancre, while in the remainder either the appearances were uncertain or the animal died at an early stage. It is remarkable that in one case where the part was excised eight hours after the infection chancre nevertheless developed. Other experiments were made for the purpose of determining the time within which syphilis may become general but were not yet finished. The administration of mercurials did not prevent the eruption of general syphilis. Professor Neisser finally discusses the possibility of immunisation against syphilis and the results of bacteriological examinations. He stated that the spirochæte pallida, recently alleged to be the cause of syphilis, was probably in etiological connexion with the disease but that practically the presence or absence of the spirochæte did not prove anything either for or against the question of infectivity. Professor Neisser has returned to Germany but the research will be continued by his assistants who remain in Java.

A Model Institution for Infants.

On the occasion of the silver wedding of the German Emperor and Empress a series of benevolent institutions will be founded by public subscription. One that will certainly be received with approval by the medical profession is a model institution for infants. At a meeting of the committee under the presidency of Dr. Schönstedt, late Minister of Justice, when among others Dr. Heubner, professor of children's diseases in the University of Berlin, was present, some particulars were given about the proposed institution. The "infants' home" is to be erected at Charlottenburg, a suburb of Berlin, on a site presented to the Empress for this purpose by the municipal authorities of that town. The institution will include several departments. In the first department pregnant women will be received three months previously to their confinement and after it they will stay there for a fortnight. The children must be fed by the mother and they are therefore transferred to another department termed the "mothers' home," where they stay for three months. For children who have to be fed artificially on account of their mothers being unable to suckle them a third department will be provided, where, moreover, children born outside the institution are to be received. A fourth department is destined for sick infants. In connexion with the institution there will be a large dispensary (*Fürsorgestelle*), which will undertake the after-care of mothers and children who have left the home and where mothers and pregnant women may obtain advice and will be provided with food. Large chemical and bacteriological laboratories and a model cow-house are to be

erected, and in addition to the medical and nursing staff a training school for special nurses for children will be attached to the institution.

Jan. 22nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Measles in Milan.

THE health conditions of the Lombard capital have a more than domestic importance. Representatives of every nationality in Europe pass through Milan or pause on the wing within its gates on their way to or from the great Italian centres or to or from Egypt and the Far East. Short as is their sojourn, it is, as experience has shown, quite long enough to expose them to the risks of infectious disease which in one form or another is never quite absent from a city the water-supply of which is still drawn from subsoil or other sources leaving much to be desired. In the day now passing it is measles which is the most prevalent in the Milanese environs and central quarters—measles not only of a pronounced infective type but prone to assume complications mostly broncho-pneumonic in character. Starting from the communal villages, where the returns for December give 212 cases at Boffalora Ticino, 143 at Abbiategrasso, 43 at Assago, 100 at Magnago, 45 at Turbigo, and 40 at Canegrate, it has invaded the city itself till the sojourner within it can hardly venture with safety into its railway station, or its galleries, or its houses of public entertainment, or even its tramcars and omnibuses. It is but just to say, however, that the sanitary authorities are fully alive to the danger besetting the city and are carrying out the most stringent precautions by way of circumscribing its "sphere of influence." All cases, for instance, declaring themselves in schools, asylums, and industrial establishments employing juvenile labour, are at once isolated and subjected to appropriate treatment, and so far with a success which implies intelligent co-operation on the part of the heads of the said establishments or institutions. As a great *entrepôt* of foreign travel Milan owes it to the outside world from which she derives so much solid gain to follow up the sanitary measures which she is now putting in practice with a still wider and more thorough-going programme which will include improvement of her water-supply and the sweeping away of her "fever preserves."

The New Surgical Clinique at Pisa.

The ancient University of Gallia and Cesalpino, of Vaccaro and Puccinotti, has been holding high festival on the occasion of the opening of its "Nuova Clinica Chirurgica." This adjunct to its teaching equipment, long required but inevitably postponed, has at length been carried to completion, mainly through the energy and personal influence of Dr. Antonio Ceci, professor of surgery in the Pisan School and respected throughout Italy as one of her best teachers and operators in that department of medicine. Private liberality on his own part and on that of his friends, reinforced by munificent contributions from the King and the Government, has been rewarded by the realisation of its object in the fine, commodious, and eminently serviceable structure in which the Pisan medical student will now perfect himself in surgery under conditions second to none in any other Italian seat of learning. The inaugural ceremony, in which the Senatus Academicus of Pisa and representatives of all the other sister universities took part, was graced by a peculiarly felicitous address from the rector, Professor David Sapino, who took occasion to review the successive stages through which surgical and medical practice and teaching had passed within the Pisan School itself—from the days when in 1543 there were two necropsies within the twelvemonth, graciously conceded or authorised by the Grand Duke, to the present time when every year witnesses 300 necropsies at least; while no farther back than 1870 the number of operations averaged 70 per annum and now there are as many as 500 within the same period. After the rector came the professor of clinical medicine, Dr. Queirolo, who, speaking in the name of the Minister of Public Instruction, evoked repeated salutes of applause in his enumeration of the services of Professor Ceci and of the architect, Professor Caselli. He was followed by these two latter who, each in his own department, drew an impressive picture of the difficulties to be surmounted before the result so universally admired could be achieved.

In the evening Professor Ceci entertained at the Hôtel Nettuno a large number of guests, including the local medical faculty and the delegates from the sister schools and again the oratory was of that brilliant character traditional in the academic Saturnalia of Italy.

Jan. 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Hypertrichosis graviditatis.

A NOVEL symptom of pregnancy, or at least one which has received little attention, has been noted by Dr. Halban and he made it the subject of a paper which he read at a recent meeting of the Vienna Gynecological Society. He had noticed for several years that brunettes who in Austria very often show rudiments of a moustache developed during pregnancy a fairly visible masculine type of hair on the upper lip. Systematic observation has convinced Dr. Halban that pregnancy stimulated excessive growth of hair not only on the face but also on all other parts of the body. In particular the lanugo of the abdomen and the extremities was very often influenced by pregnancy, but Dr. Halban was not prepared to state whether the hair of the axilla or pubes was affected. The increased growth might be noticed from the second month of pregnancy and continued till the end of normal gestation or, to speak more exactly, till the expulsion of the placenta, when these hairs had a tendency to fall out again, as could be seen very clearly on the mammae and on the linea alba, where hair of from one to two inches in length might disappear a few days after delivery. Dr. Halban thought that certain active principles connected with the placenta or with the epithelium of the chorion were responsible for the changes by producing hyperæmia and thus better nutrition of glandular organs, as is already known for the mammae. This hypothesis, which was well supported by many experiments on rabbits and dogs, would give a good explanation for the increased growth of the hair seen on the foetus from the sixth month, and would be consistent also with another fact noticed by a number of obstetricians—namely, that many females who become pregnant at a time when the growth of their bones has not yet been arrested grow more rapidly during pregnancy than either before or after it. The women became aware of this by finding that the skirts which they had been wearing for six months required to be lengthened.

A Case of Congenital Dilatation of the Colon.

Professor Escherich recently showed at a meeting of the Pediatric Society some specimens taken from a child, three and a half years old, who had been suffering since birth from a very rare form of intestinal disease called Hirschsprung's disease after the name of the observer who first described it. The birth was normal but the child's abdomen was enormous. An enema which was immediately administered succeeded in bringing away three-quarters of a pint of meconium and after a few hours the infant vomited masses of meconium. The abdomen diminished a little but it remained always unusually large, with a well-marked caput medusæ (dilatation of the umbilical veins). Evacuations of the bowels had to be obtained by enemata, as spontaneous motions never occurred. Therapeutic measures in the form of faradic irritation of the abdominal muscles, massage, and passive exercises intended to strengthen the muscular walls were tried but without any appreciable effect. When the child was weaned the condition was still worse. An operation was ultimately performed, the ampulla recti, with a part of the colon, being amputated but the child died soon afterwards from exhaustion. The post-mortem examination revealed an enormous dilatation of the cæcum, the transverse colon, and the sigmoid flexure, whilst the muscular coats of the parts lying between the distended sections were greatly hypertrophied, the increase taking place chiefly in the stratum of circular muscles. The stomach measured only two and three quarter inches in its longest diameter. There are only 50 cases of such a condition on record. It is mostly congenital; it may also be acquired very early in childhood and is usually fatal from auto-intoxication or exhaustion.

Sarcoma of the Mediastinum.

Dr. Sternberg showed on a recent occasion some of the viscera of a man who died half an hour after admission to

hospital and who presented extensive oedema of the upper half of the trunk and arms and cyanosis of the face. The necropsy explained the condition. A spindle-celled sarcoma occupied the whole anterior half of the mediastinum, had attacked both lungs, and was three inches in thickness on the frontal aspect of the heart. The pericardium had disappeared and the right auricle, the right ventricle, and part of the left ventricle were in contact with the diaphragm. The remainder of the heart was invaded by the heteroplastic mass and could not be detached from it. The cavities of the heart were exceedingly narrow and the muscle was very friable. All three coats of the aorta and the pulmonary artery were involved in the tumour and from the ostium of the superior vena cava there protruded a long polypoid mass into the lumen of the auricle. The vein itself was nearly blocked by the tumour, only a very narrow lumen being left. Numerous secondary deposits were found in the lungs and the liver. The interest of the case centred in the abnormal mechanical condition involving the heart. It was hardly possible to surmise in what manner the systole and diastole of the heart took place, as nearly the whole of the muscular wall was fixed by unyielding tissue and as there was no pericardial membrane left. Another remarkable fact was the absence of deposits within the bones or in the lower parts of the body, although the vessels were mere canals within the foreign mass.

Spirochæta Pallida in a Primary Chancre and in the Liver.

Dr. Volk, who is endeavouring to prove the existence of the supposed micro-organism of syphilis in all manifestations of that disease, has prepared several films from an excised chancre in which there could be seen several spirochætes within the fibres of the connective tissue and between the cells of the deep portions of the Malpighian layer. They were stained by Levaditi's method, which has the effect of rendering the micro-organism black by a precipitate of silver. Out of five slides only one was useful, illustrating the difficulty of looking for the faintly coloured organism. In the liver they were found much more frequently. The liver was that of an infant, aged six months, who had died from intestinal catarrh, and in whom syphilitic symptoms were manifest at birth, but subsided quickly after treatment with iodine. In the blood of the patient from whom the chancre had been excised the spirochæte had been found on several occasions but could not be demonstrated as the films were spoiled.

Jan. 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A New Hospital for New York City.

THE late Mr. Charles T. Yerkes in his will directed that a sum not to exceed \$800,000 is to be used for the purchase of a suitable site and the erection thereon of a hospital building in the Borough of the Bronx, a section in the northern part of the city now growing very rapidly and at present but poorly supplied with hospital facilities. The support and maintenance of the hospital are also provided for by the setting apart of an endowment fund of about \$5,000,000, the income of which is to be used for this purpose. The testator further directs that the institution shall be open to the public without regard to race, creed, or colour, and that those unable to pay shall be cared for free of all charge. According to the provisions of the will the necessary funds would not be liberated for this purpose until after the death of Mrs. Yerkes who is to receive the income of the residuary estate during her life but she is said to have expressed the intention, if legally possible, of beginning the work at once.

Obstetric Rareties.

From Bristol, Virginia, comes the remarkable story that a ten-year-old coloured girl of that town has just been delivered of a full-sized infant. To parallel this it is reported from Albany in New York State that a woman, aged 20 years, a short time ago gave birth to a child 116 days after having brought another infant into the world. The first labour was attended by a midwife but the medical man who was present at the second one states that both children are normal.

A New Army Hospital.

Congress has provided for the erection of a new Army General Hospital at Washington at a cost not to exceed

\$300,000 for the building. A site has already been selected and plans have been prepared and accepted.

Ambulances at Fires.

According to an arrangement which has been made with the larger hospitals of Philadelphia an ambulance will henceforth be present at all fires within the urban area. The city has been divided into suitable districts and each hospital is to respond to fire alarms occurring in its portion.

Football Accidents.

An interesting confirmation of the view that the current public disapprobation of the game of football as now played is not ill-founded is furnished by a recent publication in the *Boston Medical and Surgical Journal*. Dr. Edward H. Nichols and Dr. Homer B. Smith, the two surgeons upon whom devolves the care of the football squad of Harvard University, have summarised the result of their professional attendance on the players and arrive at conclusions quite in accord with the belief that the game involves risks of physical injury disproportionate to its value as an athletic exercise. A table is given showing the injuries received during the season extending from Sept. 12th to Nov. 25th, 1905, by the football squad, which represents a real playing strength of about 70 men. The list of important injuries reaches the total of 145. The injuries most often noted are cuts (requiring stitches), sprained ankle, cerebral concussion, and dislocation of the acromial end of the clavicle. These all occur ten or more times, the number of concussions, for example, being 19, and only two games were played in which an accident of this sort did not occur. A case of middle meningeal hæmorrhage, four fractures of the brim of the pelvis, and seven broken noses also figure in the table. The authors describe the general plan of treatment of the common injuries, which in some respects differs from that usually employed owing to the necessity of taking some chances in accordance with the imperative demands of the patients to be allowed to return to play at an earlier date than would be usual in ordinary practice. Considerable importance is attached to the fact that owing to the precautions taken to secure extreme personal cleanliness by insisting that only fresh towels should be used, the underclothing be changed frequently, &c., no infected wounds or skin infections occurred. As a result of their experience the authors reach the conclusion that the number, severity, and permanence of the injuries received in playing football are much greater than is generally credited or believed. The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries also occur in the open. The number of injuries is inherent in the game itself and is not especially due to competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. Most of the injuries are unavoidable and their percentage is incomparably greater in football than in any other of the major sports. The game does not develop the best type of men physically, because too great prominence is given to weight without any corresponding development of nervous energy. The percentage of injuries is too great for any mere sport and it is a question if a game requiring the constant attendance of two trained surgeons is played under desirable conditions.

Medical Men and Pharmacists.

The medical men and druggists of the State of Iowa are at variance and have been accusing each other of encroaching on their respective privileges. The mutual recriminations have reached such a point that the State government is to be appealed to, and each camp is circulating a petition for signatures which will later be presented in the form of a Bill before the legislature. The grievance of the medical men is that the druggists have made a practice of "counter prescribing," while the pharmacists allege that they have been driven to this usurpation of medical prerogative by the tendency of the physicians to furnish drugs to patients instead of writing prescriptions.

Urban Health Conditions.

New York city's death-rate for 1905 makes a very favourable showing as compared with previous years. In 1904 the mortality per 1000 was 20.01 but in 1905 it was reduced to 18.25, which is next to the lowest figure on record. The number of deaths from contagious disease is lower than ever before. In 1905 the births numbered 103,852, a gain of 4297 over the statistics of the previous year. The marriages

also were more numerous, for in 1905 42,667 were registered, as against 39,436 in 1904. The deaths were decreased almost exactly as much as the births increased, for the deaths in 1905 were 73,450, while for 1904 they were 78,060. In Chicago the death-rate has also been greatly reduced, and during one week in December it was only 12.80 per 1000, which is the lowest figure ever recorded in that city. For the entire year of 1905 it was less than 14 per 1000. The average duration of life in 1873 was 15 years, but now the average age of those dying is over 32 years. Philadelphia has been suffering from an epidemic of measles and in one week 201 cases of this disease and 152 of typhoid fever were reported.

Jan. 16th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Mahomedan Pilgrim Traffic from Bombay.

THE pilgrim traffic for Mecca from the port of Bombay is very considerable and involves great expense as well as elaborate precautions. Bombay being a plague-infected city, quarantine for these pilgrims is obligatory according to the Venice Convention. It appears that the quarantine camp provided by the Government has not been sufficiently large and that pilgrims who could not pass into the camp have been roaming in large numbers about the city of Bombay. Many of these people are utterly destitute. An attempt has been made to do away with the quarantine camp but that is at present impossible and the port of embarkation must either be changed or provision for a larger number made in the camp. By removing the port of embarkation to a non-infected place quarantine would become unnecessary and a medical inspection would be sufficient. In this case there would be always the danger of plague breaking out amongst the pilgrims on board ship as it is impossible to detect cases in the incubative stage and the consequences of this accident would be very troublesome. The wisest course is to increase the observation camp according to the number of pilgrims, which would probably prove in the long run the least expensive measure. An announcement is made annually of the numbers of pilgrims who leave India for Mecca but there are no corresponding figures for the numbers who return. Old and infirm as the majority are the mortality amongst them must be considerable and the hardships which these people go through on arrival in the Turkish dominions have been reported upon over and over again. It is also known that the majority of those who do come back to India return penniless and many of them have to be helped to get back to their native places.

A Fresh Census for Bombay City.

The last census indicated that the city of Bombay had decreased in population. This was attributed to plague which in the five years had probably stricken down 100,000 people. Many of the inhabitants had also left the city for the country districts. As the fear of plague has now diminished and the population has apparently again increased it has been urged upon the corporation to take a fresh census. This will be done for the town and island of Bombay on the night of Feb. 9th. It is probable that immigration into the city has made up the population to the old figures and the value of the census for statistical purposes is obvious. The mortality-rate based on the census of 1901 is very high.

Reservoir Leakages and Fever in Bombay City.

For some time past leakages have occurred from the Malabar Hill and Bhandarwada reservoirs in the city of Bombay and the surrounding areas of ground have been sodden and swamped. Associated with this condition these surrounding areas have been fever-stricken. The corporation has now called for a report. Since 1901 the health department has taken steps to keep the tanks themselves free from mosquitoes but the danger covers a much wider area and the necessity of treating all the pools and ditches and surface collections of water as well as the wells, fountains, and drains by an active anti-mosquito campaign is recognised as imperative pending the carrying out of the engineering measures required for the repair of these huge reservoirs. The anopheles mosquitoes have been abundantly found in nearly all parts of the city but the pools and swampy places occasioned by these leakages have been their chief breeding grounds.

The Plague Epidemic.

The plague mortality figures for India show fluctuations which are probably sometimes due to faulty returns. For the week ending Dec. 23rd, 1905, 3170 deaths were recorded but several districts are omitted from the usual list. The details are: Bombay Presidency, 729; United Provinces, 761; Bengal, 639; Central Provinces, 400; the Panjab, 314; Mysore State, 124; and Burma, 77. The figures for the large cities are not published.

The Work of the St. John Ambulance Association in India.

The report for the year of the work of the St. John Ambulance Association in India has just been issued and shows a marked activity in several of the more important and populous centres. A central committee at Simla now governs the Indian branch but the various provincial centres manage their own affairs. The chief work seems to be amongst the European population (also the Parsi) but a considerable amount of instruction has been given to natives. The railways have been very active and a large proportion of their employés have gone through the "first-aid" course. A challenge shield is competed for annually amongst the railways and also amongst the volunteers. In Bombay an ambulance brigade and a ladies' nursing division have been formed and it is proposed to form a reserve to augment the nursing establishment in time of war. The police of Calcutta and Bombay have all been instructed in first aid to the injured and a better organisation has been established in these two cities in the event of accidents. The members of the medical profession appear to have given their services in all cases but it is quite a question whether the time has not come, as in England, when instruction and examination should be paid for.

Jan. 5th.

Obituary.

HARRY CAMPBELL POPE. M.D. LOND., F.R.C.S. ENG.

Dr. H. C. Pope, who died on Jan. 2nd, in his fifty-sixth year, was the son of the late Mr. E. Pope, M.R.C.S. Eng., of Tring. He received his medical education at Liverpool and at University College, London. After taking the M.B. Lond. with honours he became successively medical tutor and demonstrator of anatomy at the Queen's College, Birmingham, and house surgeon to the Seamen's Hospital, Greenwich. Upon the expiration of his term of office he married and settled in practice at Shepherd's Bush. Having taken the F.R.C.S. Eng. in 1876 and graduated M.D. Lond. in 1878 these qualifications, together with his personal character and various gifts, soon gave him a leading position in the western district of London. This was very manifest in connexion with the West London Medico-Chirurgical Society, in which he was constantly put forward in various representative ways by his neighbours and colleagues. He always represented them with dignity and good taste, speaking with ease, sound sense, and a frequent touch of humour, occasionally playfully descending into a pun. He had a calm, easy-tempered, good-natured disposition which made him very pleasant to work with. He filled nearly every possible office in connexion with the West London Medico-Chirurgical Society, being a member of council from its commencement, 25 years ago, and its president in 1899. He also took a very active part in the management of the Medical Defence Union, of which he was a vice-president. Dr. Pope had from the beginning of his entering the professional ranks as a practitioner a large private practice and his patients saw in him not only a valued scientific physician but also an accomplished friend. His chief recreation was music, in which he was well skilled. He played both the piano and the organ, but above all he had a pleasing and powerful baritone voice and was a cultivated singer. Many of our readers will remember the pleasure he has often given them on various social occasions, public and private. In appearance he was a man of portly build, with good features and a quiet expression, although his dark eyes frequently lighted up with the humour already referred to. There are probably few persons of whom it could be more truly said that he was universally liked and trusted and had no enemy. His death was very sudden and a severe blow to his many friends and patients. Able, accomplished, and altogether

devoid of restless ambition but, at the same time, ever ready to do whatever duty or good work lay in his immediate way, his friends, while grieving at his departure, feel that his life is a very pleasant one to look back upon. His personality, much that he said, and more that he did, will be vividly remembered by many people when the celebrity of more prominent public characters will be nothing but the mere memory of a name. He was not a frequent or voluminous contributor to medical literature but in his many quiet speeches at medical societies he contributed altogether a great volume of practical experience and in that manner made public in brief the details of many interesting cases. He was buried in Hammersmith Cemetery, the funeral being attended by many old private friends, including Dr. Frederick T. Roberts, whose friendship dated from Liverpool days, and by official representatives of the societies to which Dr. Pope had belonged. He leaves a family of two sons and three daughters to mourn their loss, the elder son being a student at St. Mary's Hospital.

WILLIAM WINGATE WINGATE SAUL, M.D. HEIDELBERG, M.R.C.S. ENG., L.S.A.

Dr. William Wingate Wingate-Saul, who died on Jan. 22nd at his residence, Fenton-Cawthorne House, Lancaster, was one of the foremost and most respected citizens and public men of the town. About 18 months ago failing health compelled him to give up practice and he was confined to his room for many weeks before the end came. He was the third son of Mr. William Saul of High Ferry House, Sibsey, Lincolnshire, and grandson of Captain B. Kelsey Saul, who commanded the Sibsey volunteers a century ago, and a direct descendant of Colonel John Saul, who, for his gallant defence of Croyland Abbey in the Civil War, received the freedom of King's Lynn. He was born at High Ferry House on July 24th, 1842, and assumed the additional surname of Wingate by deed poll dated June 18th, 1891. His early education was received at King Edward VI. School at Louth—the school of Tennyson, the Lincolnshire Laureate, and Tom Hood—and in due course he studied medicine at St. Bartholomew's Hospital and the University of Heidelberg. In 1867 he took the diplomas of M.R.C.S. Eng. and L.S.A., and in 1870 he graduated as M.D. at Heidelberg. In the last-mentioned year he went to Lancaster at the suggestion of Sir James Paget and Sir Richard Owen to join Mr. Langshaw in partnership, and he succeeded to the practice on the retirement of Mr. Langshaw.

Many public positions have been filled by Dr. Wingate-Saul in Lancaster. For nearly a quarter of a century he was surgeon to the civil and military prisons at Lancaster Castle and had several notable people under his care. For a short time he was on the staff of the Lancaster Infirmary when the institution was situated in Thornham-street, and during the whole of the time he was in practice he was medical officer to the Royal Grammar School and to the Ripley Hospital. For 22 years Dr. Wingate-Saul was an officer in the Duke's Own Yeomanry and always took great interest in everything concerning the regiment. He joined the regiment in June, 1881, with the rank of surgeon-captain. In June, 1901, he was appointed lieutenant-colonel and on his retirement, after 22 years' service, he was raised to the rank of colonel and granted permission to wear the uniform of the regiment. The "Duke's Own," now known as the Duke of Lancaster's Own Imperial Yeomanry, was founded about 1800 and is therefore one of the oldest volunteer cavalry regiments in England. It was brought into special prominence during the Chartist riots of 1818 and the charge of Peterloo consequent thereon.

Dr. Wingate-Saul was the founder of the Lancaster centre of the St. John Ambulance Association. He was the first lecturer for the association in Lancaster, was awarded the medal of the order, and at the time of his death was one of its honorary associates. He was chairman of the local branch of the Royal Society for the Prevention of Cruelty to Animals ever since its formation and assisted the work of the branch materially. He was always in sympathy with the feelings of dumb animals and was particularly emphatic against the use of the now universally condemned tight-lining-rein. He was one of the original members of the County Club at Lancaster; a member of the Red Rose Club, established as a bond of connexion between the past and present officers of Lancashire regiments of militia and yeomanry; and chairman of the Ratepayers' Association

which he assisted to form. His tastes were chiefly in the direction of literature, art, and music. He was for some time president of the Orchestral Society and chairman of the Choral Society. It may be worthy of note that he used at several public performances a Stradivarius violin, purchased by a cousin of his father in 1826. He had played on it since he was a boy and it is described as an exceptionally fine model of Stradivarius's best type of violin. He owned, too, a very fine Amati. Dr. Wingate-Saul was also the possessor of two very fine examples of Romney's work—life-size portraits of the Fenton-Cawthorne family. He was a member of various societies outside Lancaster, such as the Hackney Horse Society, the Polo Pony Breeding Society, and several agricultural societies, including the Royal Agricultural Society of England, with which, however, he ceased to be connected on the council moving the annual fixture to Park Royal near London. Amongst other breed societies with which he was connected may be mentioned the English Kerry and Dexter Herd Book Society and the Large Black Pig Breeders' Society.

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The deceased gentleman was a *laudator temporis acti*, a Conservative and a Churchman, a supporter of Church and State of the old-fashioned type. He attributed much of the lack of usefulness of some of the rising generation to the degeneracy brought about by cheap literature. One of the greatest pleasures of his life was a well-arranged reference library, which enabled him to become particularly apt in quotation, anecdote, or illustration. He possessed the pen of a ready writer, and his letters to the local press, if they could be collected and reprinted, would throw interesting sidelights upon local history during the past 30 years. Soon after going to Lancaster he married the eldest daughter of the late Mr. William Storey, J.P., of Fairfield House, who was mayor of Lancaster in 1872-73. Mrs. Wingate-Saul survives him with four sons and two daughters. Those who are interested in coincidences will find matter for reflection in the fact that Dr. Wingate-Saul's father, mother, and brother, like himself, died when they were 63 years of age.

HENRY PARR MALLAM, M.R.C.S. ENG., L.S.A.

By the death of Henry Parr Mallam, which occurred somewhat suddenly on Jan. 19th, one of the most familiar figures in Oxford passes away. He was born in 1838 and was rightly proud of the fact that he had earned his own living from the age of nine years when he was elected to a choristership at Magdalen College. Determining to enter the medical profession he became apprenticed to Dr. Freeborn when about 17 years old and then gained a scholarship at Charing Cross Hospital. Part of the money necessary for his livelihood he had to borrow, but by dint of hard work he was enabled to pay it off within a short time. In 1862 he became L.S.A. and was elected as house surgeon. In the following year he took the diploma of M.R.C.S. Eng. and started practice in Oxford in the same year as partner with Dr. Martin. Their practice lay mainly among the hunting farmers of the neighbourhood and in those days it was possible for a medical man to combine professional work with the active sports of hunting and rowing, both of which occupations appealed greatly to Mallam. Of more sedentary amusements Mallam was fond of whist and of music. With regard to the latter his early training stood him in good stead, while he possessed that much-to-be-envied treasure a real tenor voice. He was for many years a member of the Oxford Orpheus Society and a vice-president of the choral society. Besides his purely professional work he took his share in municipal affairs, serving for many years of his life as a member of the local board. For 42 years he was medical officer to the Oxford workhouse and to the Poor-law school and in these two difficult and important posts he was renowned for his kindness and tact, the former

never degenerating into mere sentiment and the latter containing a large element of shrewdness. His relations with his board were always peculiarly happy. His advice was always ready and thoroughly sound, while he was at once courteous and firm as a professional adviser should be.

The position of a medical man in large practice in a University town is one of great distinction and of corresponding responsibility and there are few positions which give rise to such opportunities for making friendships and, moreover, for criticism or even worse. But Mallam so bore himself that his friendships were many and warm, while the reverse was practically unknown. He was a man of well-balanced judgment, keeping thoroughly abreast of all recent advances in medicine and choosing carefully and adopting what seemed of service. His skill in obstetrics was great and for many years he held the leading practice in this department in Oxford and its neighbourhood. He married a Miss Margetson and the great sorrow of his life was her sudden death after about 18 years of married life. He leaves four daughters and three sons, one of whom, Dr. Ernest Mallam, follows in his footsteps in Oxford.

Mallam belonged to the school of a bygone day; not that we mean that he was in any way fossilised but to those who knew him well and, indeed, to all who came into contact with him his personality was very lovable. Quiet, free from all self-seeking, most kind, with an old-fashioned courtesy full of charm, he took a place in Oxford medical life of much distinction and has left a gap which will be felt by everyone who has had the privilege of his friendship. He was one of those who had the rare gift of making his patients feel that he could aid them directly he came into the room. "I have ever thought," says Manchester Al Mondo, "the right way to dye well, was to live well," and if this can be said of any man it may well be said of Henry Parr Mallam.

WILLIAM AUGUSTUS WEST, L.R.O.P. IREL., L.R.O.S. IREL., L.M.

THE death of Mr. William Augustus West is announced at Sydney, New South Wales, at the early age of 46 years, from pneumonia, followed by pleurisy and heart affection. Mr. William West was the youngest son of the late George White West, barrister-at-law, of Ardenode, co. Kildare, and qualified for his profession in Dublin. He then left for Sydney where he became assistant to, and afterwards partner with, his elder brother, the late Dr. Arthur Annesley West, then practising at the Glebe, a suburb of Sydney. When Dr. Arthur West died in 1885 Mr. William West continued the practice alone. He was well known and highly respected in the city as an able practitioner, and also esteemed for his kindly disposition, during the 22 years he spent in the district. His untimely death occurred on Dec. 11th, 1905, and he leaves a widow and two children to mourn their loss.

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Mr. Francis Fox died at his residence, 9, Athenium-terrace, Plymouth, on Jan. 18th, in his ninety-third year. The deceased, who received his professional training in Birmingham and at University College, London, took the diplomas of M.R.C.S. Eng. and L.S.A. in 1838 and 1837 respectively and shortly afterwards commenced practice in Plymouth. He was formerly surgeon to the Plymouth Public Dispensary and had been for many years on the honorary staff of the South Devon and East Cornwall Hospital, being honorary consulting surgeon to that institution at the time of his death. When the cholera outbreak occurred in Plymouth in 1849 Mr. Fox had charge of the cholera hospital and did noble work hand in hand with the late Rev. G. R. Prynne, vicar of St. Peter's. Mr. Fox was one of the oldest members of the Royal Western Yacht Club and took a great interest in yachting matters. In his younger days he was well known as a skilful operating surgeon and was one of the first surgeons in the West of England who performed ovariectomy with a successful result. Mr. Fox leaves a son and daughter. He will be missed in Plymouth where he was highly esteemed and respected, for there have been few inhabitants of the "three towns" better known in days gone by.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the examination held in January the following candidates passed in the subjects indicated:—

Surgery.—J. A. Kilpatrick (Section II.), King's College Hospital; and S. Zweifelback (Section II.), Koenigsberg.
Forensic Medicine.—L. O. W. Brigstocke, Oxford and St. George's Hospital.
Midwifery.—J. P. E. Henery, St. George's Hospital; O. Mulholland, Belfast; and H. F. Wight, Guy's Hospital.
 The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. A. Kilpatrick and S. Zweifelback.

UNIVERSITY OF CAMBRIDGE.—Mr. H. O. Jones has been appointed deputy for the Jacksonian professor, Sir James Dewar, for the present term.—The following degrees were conferred at the Congregation on Jan. 18th:—

M.D.—A. C. Hudson, Trinity.
 Sc.D.—H. J. H. Fenton, Christ's.
 M.C.—C. B. Goulden, Downing.
 M.B.—N. C. Carver, King's; W. R. Honeybourne, Peterhouse; R. Pattock, Emmanuel; and W. P. Williams, Downing.
 B.C.—P. Shingleton Smith, King's; A. D. Brunwin, H. T. Gray, and A. H. Miller, Trinity; F. F. Leighton, T. M. Neathy, and G. C. E. Simpson, St. John's; J. O. L. Roberts, Clare; C. Lillingston, Pembroke; C. H. W. Page, Corpus; G. W. de P. Nicholson, Jesus; G. L. Cox, Christ's; C. T. Scott, Sidney; and W. D. Keyworth, Selwyn Hostel.

LITERARY INTELLIGENCE.—Mr. William Heine-mann will publish in the spring under the title of "A Handbook of Metabolism," an English translation of the second German edition of von Noorden's "Lehrbuch des Stoffwechsels," edited by Dr. Walker Hall.

Mr. J. Collingwood Thompson, L.R.C.P. & S. Edin., L.F.P.S. Glasg., who died on Jan. 13th at Bank Head, Fencehouses, Co. Durham, was only 33 years of age, and his early death from acute pneumonia will come as a surprise to many who only knew him in his usual robust health. Though he qualified by taking the triple qualification of Edinburgh and Glasgow he was originally a student at the Durham University College of Medicine. For a time he practised in North Northumberland but several years ago settled at Bank Head where he soon became very well known to the mining population of that district. Mr. Thompson's mother, who survives to mourn his death, was a niece of the famous admiral, Lord Collingwood.

BRITISH GYNÆCOLOGICAL SOCIETY.—The annual dinner of this Society was held on Jan. 17th, at the Monaco, London, Dr. W. Alexander, the President, being in the chair. The toast of "The British Gynæcological Society" was proposed in felicitous terms by Dr. T. W. Eden. The President, in responding, gave some details of the progress and prosperity of the society. The foundation meeting was held on Dec. 27th, 1884, and its first president was Dr. A. Meadows. The society had existed for 21 years and its Fellows numbered nearly 500. He referred with pride to the journal of the society and his complimentary remarks concerning the work of the honorary secretaries, Dr. S. J. Aarons and Dr. S. Savage, elicited great applause. In connexion with the proposed amalgamation of medical societies the President mentioned that the British Gynæcological Society had given its adhesion to the proposed scheme. Dr. H. M. Macnaughton-Jones was entrusted with the toast of "The Services," which he proposed in an eloquent and impressive speech. Surgeon-General A. H. Keogh, C.B., Director-General of the Army Medical Service, in the course of his reply to this toast observed that the medical profession had a definite relation to war and explained how a campaign without a properly equipped medical department was bound to be a losing one and the sooner the medical profession awoke to the fact the better it would be for all concerned. The army authorities were responsible for an enormous number of women and children scattered throughout the Empire and it was part of the duty of the Army Medical Service to help these people. Medical officers were now trained specially for the work and anyone who visited the hospitals at Aldershot would give full credit for the excellent results obtained there. The enjoyment of the evening was enhanced by a well-arranged musical programme.

THE GENERAL ELECTION.—The following members of the medical profession have been returned to Parliament since our last issue: Mr. R. Ambrose, L.R.C.P., L.R.O.S. Edin., re-elected for West Mayo; Mr. R. J. Price, M.R.C.S., re-elected for East Norfolk; Dr. A. R. Rainy, M.B., O.M. Edin., elected for the Kilmarnock Burghs; Sir G. S. Robertson, K.O.S.I., M.R.C.S., L.S.A., I.M.S. (retired), elected for Bradford (Central), and Dr. V. H. Rutherford, M.B. Cantab., &c., elected for the Brentford Division of Middlesex. Amongst those who have lost their seats are Sir Michael Foster, K.C.B., M.B. Lond., and Dr. O. F. Hutchinson, M.D. Edin.

SOCIETY OF ARTS.—At an ordinary meeting of the Society of Arts held on Jan. 17th Dr. W. A. Aikin read a paper on the Scientific Aspects of Voice Development. He said that in the production of the voice three factors were involved—namely, the breath, the vocal reed, and the resonator. On the subject of the breath he said that the voice required a large and well-controlled volume of air in the chest and he discussed the relations of costal and diaphragmatic breathing at some length. The best effect was produced by what he called "central breathing," in which during inspiration the lower ribs were raised and fixed and the diaphragm was drawn down so that the upper part of the abdomen (but not its lower part) was caused to bulge forwards. The first part of the vocal expiration was accomplished by the diaphragm and the ribs afterwards began to descend. Contrary to the normal rhythm of respiration, the intake was usually rapid, and in singing the output was carefully distributed over a period which might be as long as 15 seconds. Dr. Aikin then described the mechanism by which the "vocal membranes" created sounds and said that their action was that of an acoustic reed. He next mentioned a variety of objections to the use of the manœuvre called "coup de glotte," or intentional closing of the sphincter, constituted mainly by the ventricular bands—two muscular folds immediately above the vocal membranes. He said that the variation of the pitch of the note depended upon the range throughout which the tension of the vocal membranes could be varied; this was entirely under the control of mental sound perception and in order to start a note without any uncertainty or hesitation it must be heard in the mind beforehand. The third factor in the production of the voice was the resonator or hollow spaces of the throat, mouth, and nose. The resonator could be sounded by itself, as in whispering—that is, without any reed note—but it was not possible to hear the reed note by itself since it could never avoid passing through the resonator. Thus it arose that every sounding note or vowel in language was associated with a particular position of the resonator. The power of using the vocal reed existed almost from the moment of birth but the management of the resonator was wholly acquired by education, just as with other voluntary muscular actions. The vocal reed was virtually the instinctive instrument of the emotions while the resonator was the cultivated instrument of the intellect. Different views on the subject of voice resonance have been held by different observers. Helmholtz and those who copied from him described the vowel A (ah) as being formed by a funnel-shaped chamber increasing with tolerable uniformity from the larynx to the lips. Dr. Aikin regarded this as an anatomical error and maintained that the resonator consisted of two chambers meeting at right angles by a somewhat constricted orifice in the throat, opposite which point there was a communication with a third chamber—namely, the nose. He demonstrated on himself the existence of the double or two-chambered resonator by percussing it at different times on his cheek and neck, eliciting in each case a series of ascending or descending tones according to the pitch of successive whispered sounds. He further showed that the two chambers could be made to act in unison and then demonstrated the nodal point at their junction by means of a tuning fork which sounded when held in the cavity of the mouth, was silent when advanced to the nodal point, and sounded again when advanced still farther to the pharyngeal cavity. Of the two chambers the upper one was represented by the mouth; it was roughly hemispherical with a flat floor, a domed roof, an almost circular opening in front, and an oval opening at the back passing down into the chamber of the neck, which was composed of the pharynx and larynx. This second chamber was expanded by holding the head and back straight, by raising the ribs, and by

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Notes, Short Comments, and Answers to Correspondents.

KISSING THE BOOK.

WE have upon many previous occasions referred to the unnecessary, unclean, and disgusting fashion of taking an oath provided by the English legislature, and have compared it with the cleanly form of oath "usually administered in Scotland." Relief upon this point was given to witnesses and others who have to take oaths by the Oaths Act of 1888. This Act, however, is unknown to most ordinary citizens and although probably known to commissioners for oaths and county court judges is often not acted upon as it should be. It is by no means uncommon to see in reports of trials the presiding official, be he judge or magistrate, make disparaging remarks to witnesses who desire to be sworn in the Scottish fashion. This being so we are glad to see that in a case which came before Sir Forrest Fulton, the Recorder, in the Lord Mayor's Court on Jan. 22nd, a witness objected to kiss the book and desired to be sworn in the Scottish fashion. Sir Forrest Fulton is reported as saying that he wished such requests were made more frequently. Addressing Mr. Wallace, K.C., M.P., who was engaged in the case, the Recorder expressed a hope that he, Mr. Wallace, would endeavour to get Parliament to make the Scottish form of oath universal. We quite agree with the Recorder, but in the meantime we may remind our readers that any one of them has a right to be sworn in the Scottish fashion if he so desires it and that no official has any business to make any difficulty about the matter. If, says the Oaths Act, 1888, any person desires to be sworn after the manner in which an oath is usually administered in Scotland, "he shall be permitted to do so and the oath shall be administered to him in such form and manner without further question." From a paragraph which appears in the letter from our Liverpool correspondent in another column it would seem that both the medical officer of health and the officials of the Birkenhead police court are unaware of the provisions of the Oaths Act.

A WARNING TO MEDICAL MEN.

HERE is an alcoholic individual who, when last heard of, was impersonating a medical man in singularly ingenious and mischievous circumstances. He recently applied, while apparently the worse for drink, at a provincial hospital, where he gave the name of the resident medical officer at another provincial hospital, and asked for assistance and a bed. The sister-in-charge of the hospital accordingly gave him the address of one of the members of the medical staff, as she could not herself take the responsibility of admitting him. On him the imposter called and again said that he was Dr. —, the resident medical officer of — hospital, adding that he had "been on the loose" and had had an attack of hæmatemesis in the train and felt very ill. The medical man, noting his obviously sad plight, paid for his rooms in a neighbouring hotel, where the next morning he disappeared. It is possible that other medical men may be similarly victimized by this ingenious person who, although he is obviously not fit subject for medical care, is not a medical man and ought to be punished for assuming the name and address of a medical man in this singularly offensive manner.

SUPERCHILARY GYMNASTICS.

To the Editors of THE LANCET.

SIR,—I have read "Harlequin's" letter in THE LANCET of Jan. 20th, 1906. I possess the powers he writes of and am able to lift and to press the eyebrows alternately and simultaneously. I have also some over over the external muscles of the ears and can move both ears pretty freely simultaneously. These powers are, I believe, rather uncommon but the possessor of the latter accomplishment is perhaps of no altogether congratulated upon it, as it is by some regarded as a sine attribute. I prefer to regard it as an indication of an advanced stage in the evolutionary process.

Jan. 20th, 1906.

I am, Sirs, yours faithfully,

"DARWIN."

To the Editors of THE LANCET.

SIR,—With reference to "Harlequin's" letter in THE LANCET of Jan. 20th, p. 193, both my sister and I have amused ourselves for some ears by depressing one eyebrow by elevating the other. Curiously enough, we elevate the left and depress the right but not vice versa, although I believe with sufficient practice this might be attained. Here is, however, to my thinking, no great advantage to be derived from this accomplishment.—I am, Sirs, yours faithfully,

Jan. 20th, 1906.

A. B.,
Teacher of Swedish Gymnastics.

To the Editors of THE LANCET.

SIR,—I was able to perform the feat of raising one eyebrow while depressing the other at my first attempt after seeing "Harlequin's" letter. I do not know that it is a power possessed by every individual,

but perhaps with some practice most people would be able to acquire it, as also, I believe, one can (with practice) make use of the muscles of the ears to make them move by fixing the occipito-frontalis muscle.

I am, Sirs, yours faithfully,

Jan. 23rd, 1906.

CLASSIC.

To the Editors of THE LANCET.

SIR,—It may interest "Harlequin" to know that I have been able to perform the feat he mentions for some time, since I was a boy at school. I have a brother who can raise one eyebrow and depress the other but only on one side and not alternately. It is not a very hard matter to accomplish the feat with a little practice if one commences young enough. I think that it is on a par with the voluntary movement of other muscles which are not often used voluntarily, such as the small extrinsic muscles of the ear and the occipito-frontalis. With many of the lower animals the use of these muscles is an every-day occurrence and doubtless it was so with our primal ancestors. I inclose my card if "Harlequin" cares to make further inquiries.

I am, Sirs, yours faithfully,

H. B. D.

THE NEW MIDWIFE.

WITH the advent of the new midwife as moulded by the Midwives Act has come the natural desire on the part of "local supervising authorities" that the midwives under them should be instructed as to their duties. We recently published a note upon a code of such instructions in use in Manchester and now the Salop local supervising authority has followed suit and has issued instructions to its midwives. These instructions, which are based more or less upon the Manchester code, are signed by Dr. J. Wheatley, the county medical officer of health. They are sound and clearly expressed but in one place we think that an alteration is required. On p. 4, which contains the instructions dealing with the management of labour, the midwife is instructed to boil her nail-brush for three minutes. We are not aware of the fiscal condition of the nail-brush trade, but if it be one of our disappearing industries the regulation in question should give it a fillip, for we are sure that hardly any nail-brush could stand boiling for a period of three minutes more than twice or thrice. As the brush is not used for the patient but for scrubbing the nurse's hands, which are already surgically unclean, and as hot soap-and-water are to a fairly high extent bactericidal we think that it would be quite enough to soak the nail-brush in some disinfectant before using it. Unless the local supervising authority is prepared to supply nail-brushes we fancy that the local midwife will not comply with the regulation in question.

CONCERNING TUCKER: A WARNING.

A person named Tucker, who was sentenced to four months' imprisonment, at the end of 1904, for attempted fraud in connexion with the sale of a medical practice to Mr. D. L. Lindsay of Liverpool, has sent us an advertisement for insertion in THE LANCET, which runs as follows:—

"Wanted, a gentleman to manage a country practice, value £300, with appointments worth £50. No premium being asked for practice, he must be able to purchase the latter."

The replies were to be sent to THE LANCET office. We are inserting the suggested advertisement in a more prominent part of the journal than that usually accorded to such announcements as a warning to those in search of a practice to steer clear of Tucker. He addresses his letter from "Napton, Rugby," and signs himself "W. E. Tucker," but he is known to us as D. Tucker. He is not a medical man and previously to the four months' imprisonment alluded to was fined £10 and £3 costs for forging death certificates in the name of Dr. Henry Gould. It may be mentioned that the name of Mr. W. E. Tucker occurs in the Medical Register, where he is stated to be resident in Bermuda—no doubt, in D. Tucker's opinion, a fairly safe distance from Rugby and one enabling a personation scheme to be safely tried. It would be interesting to us to learn whether a Mr. "W. E. Tucker," who in a letter which has been forwarded to this office by the recipient, addressed from 101, Everton-road, Liverpool, dated Sept. 21st, 1904, signed himself "D." Tucker, is the holder of the appointments therein mentioned, worth £50! Further information concerning Tucker may be found in THE LANCET of Oct. 1st, 1904, p. 934, and of Dec. 24th, 1904, p. 1811. It seems to us that the police and the General Medical Council might both have something to say to Tucker. Any help we can give is theirs.

THE PATENT "S.Y.P." TEAPOT.

NOTHING could be simpler than the management of this teapot for the preparation of an infusion of tea containing a minimum of astringent principles. We have on a previous occasion described its main features but recently some further improvements have been made. Formerly the infuser consisted of a loose perforated metal container, whereas in the new design the infuser is part and parcel of the pot itself, the whole being made of Wedgwood cream-coloured ware. When the teapot is in its normal position the infuser is situated immediately under the dome of the pot, so that the leaves may be separated from the infusion. In making the tea infusion the leaves are placed in the infuser and the pot is filled in such a position that the spout points upwards and the handle is below. Hot water is then poured on the leaves and when it is considered that they have been sufficiently infused the

drawing the larynx down by the sterno-thyroid muscles. The expansion of this chamber was very important for the resonance of the voice but it was not essential to the actual formation of the vowels. In establishing the best possible resonant positions for the vowels the lower chamber must coöperate with the mouth. This lower chamber was in shape like a bag—narrow above where it entered the back of the mouth and wider below where it included the larynx, with the vocal membranes in the middle of its floor. The vowel sound Ah whispered with the mouth open and the teeth held an inch apart has a resonant pitch for men very close to C or O sharp in the treble stave and for women one about a third higher—namely, E flat or E. With children of both sexes the pitch is higher still and Dr. Aikin was therefore unable to accept the opinion of Helmholtz who believed that resonance was the same in men, women, and children. On Dr. Aikin's "resonator scale" all whispered vowel sounds are represented by a series of 12 notes, the lowest being that of "root" which is F in the first space of the treble stave and the highest being that of "leap" which goes up to C above the treble. He subsequently discussed the subject of the harmonic reinforcement of the voice and concluded by urging the necessity of making the study of phonology a part of the education not only of professional voice trainers but also of preachers and teachers in general. After the address he sat in front of a mirror and by means of a laryngoscope showed various movements and positions of his own larynx to several of the audience who stood behind him and looked into the mirror over his shoulder.

PRESENTATION TO A MEDICAL PRACTITIONER.—There was a large gathering at the White Hart Assembly Rooms, Tetbury, Gloucestershire, on Jan. 19th, when Sir Nigel Kingscote, on behalf of the subscribers, presented Mr. William Wickham, M.R.C.S. Eng., L.S.A., who is retiring from active work after 45 years' practice in Tetbury and the district, with an illuminated address containing the names of 173 subscribers, a silver inkstand (a copy of William III. style), and a cheque for 300 guineas as a mark of their high appreciation and respect.

MEDICAL MAGISTRATES.—Mr. Norman Henry Lawrence, L.R.C.P., L.R.C.S. Edin., has been placed on the commission of the peace for the district of Laingsburg, and Mr. Charles William Browne, M.R.C.S. Eng., L.S.A., on the commission of the peace for the district of Taungs, British Bechuanaland, South Africa.

INSANITY IN RUSSIA.—The *Pharmatzevitcheskii Vestnik* says that the recent troubles in Moscow have been accompanied by numerous cases of insanity and that the local Moscow hospitals are full of patients suffering from mental disturbance.

TIVERTON INFIRMARY.—Mr. J. Coles has given a house adjoining the Tiverton Infirmary to be used for a nursing institution. He has also given £500 to defray the cost of the necessary alterations.

UNIVERSITY OF OXFORD: DEGREE DAYS.—The following are the degree days appointed for the present term: Saturday, Jan. 27th; Thursday, Feb. 15th; and Thursday, March 15th.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ABERDEEN. PETER H., M.D. Glasg. & Lond., has been appointed Honorary Aural Surgeon to the Royal Caledonian Asylum, Banbury, Herts.

BALL, J. BRANLEY, L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to the Royal Hospital School, Greenwich, S.E.

COX, FRANKLIN, M.R.C.S., L.R.C.P. Lond., has been appointed District Medical Officer for the Clifton Union.

CUNNINGHAM, H. H. B., M.D. Brux., F.R.C.S. Irel., has been appointed Chief Clinical Assistant to the Royal London Ophthalmic Hospital.

DONSON, MARGARET D., M.D. Lond., has been appointed Pathologist to the West Riding Asylum, Wakefield.

FITZWILLIAMS, DUNCAN C. L., M.D., Ch.B., F.R.C.S. Edin., has been appointed Casualty Officer to the Hospital for Sick Children, Great Ormond-street.

GABRIEL, G. C., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Singleton District of the county of Sussex.

GRANT, J. DUNDAS, M.D. Edin., F.R.C.S. Edin., has been appointed Honorary Aural Surgeon to the Royal Caledonian Asylum, Banbury, Herts.

HARRIS, HERBERT, M.D. Edin., has been appointed Honorary Medical Officer to the Rockdale Infirmary.

LAVAL, EVARISTE, M.B. Edin., has been appointed Assistant Medical Officer to the Warneford Mental Asylum, Oxford.

LYSTER, ROBERT ARTHUR, M.B., Ch.B. Lond., D.P.H., B.Sc. in Public Health, has been appointed Assistant County Medical Officer of Health to the West Riding County Council.

MILLER, JAMES WESTER, M.B., Ch.B. Aberd., has been appointed Assistant Medical Officer at the Dorset County Asylum.

MONTGOMERIE, HUGH MAYER, M.D., C.M. Edin., has been appointed Physician to the West Cornwall Infirmary, Penzance.

MONTGOMERY, JAMES BARCLAY, M.D. Glasg., F.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the West Cornwall Infirmary, Penzance.

MURRAY, WILLIAM, M.D., C.M. Edin., has been re-appointed Medical Officer of Health of the Warming (Gloucestershire) Rural District Council for three years.

POLLOCK, W. B. INGLIS, M.D. Glasg., has been appointed Pathologist and Bacteriologist to the Glasgow Eye Infirmary.

SUTCLIFFE, ANIELLA, M.B., Ch.B. Edin., has been appointed Clinical Assistant to the Southern Branch of the Leeds Public Dispensary.

SYMONS, JOHN, M.R.C.S., L.S.A., J.P., has been appointed Surgeon to the West Cornwall Infirmary, Penzance.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSELY, BECKETT HOSPITAL.—House Surgeon. Salary £100.
BRADFORD POOR LAW HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments and washing.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coal, and light.

CANCER HOSPITAL, Fulham-road, London, S.W.—Senior House Surgeon for six months. Salary £80 per annum, with board and residence.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician also House Surgeon, both unmarried. Salary in each case £30 a year, with board and lodging.

CHELTEMER GENERAL HOSPITAL.—Surgeon-in-Charge of Branch Dispensary, unmarried. Salary £30 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician.

HALIFAX, ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence. Also House Physician, unmarried, for six months. Salary £20, with board and residence.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Resident Surgeon. Salary at rate of £80 and £120 per annum, with board and residence.

POPULAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £20 per annum, with board and residence.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—House Surgeon. Salary £50 per annum, with board and washing.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Physics. Salary £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon, for six months, renewable. Salary £80 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Honorary Dental Officer.

SIERRA LEONE, PRINCESS CHRISTIAN HOSPITAL, Freetown, West Africa.—Medical Officer. Salary £250 a year and rooms.

SUNDERLAND INFIRMARY.—House Physician and Third House Surgeon. Salary £80 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTH.

MORGAN.—On Jan. 19th, at Westcliff-on-Sea, the wife of W. Harmon Morgan, M.R.C.S., L.R.C.P. Lond., of a daughter.

DEATHS.

DE FAECK.—On Jan. 18th, at his residence in London, William Frederick de Faeck, M.D., M.R.C.S. Eng., Surgeon-General (retired), I.M.S.

MALLAM.—On Jan. 19th, at High-street, Oxford, suddenly, after a short illness, Henry Part Mallam, M.R.C.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.
UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture.—Dr. J. R. Bradford: Malignant Endocarditis

THURSDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture.—Mr. A. H. Tubby: Surgical Diseases of Children.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Galloway: Demonstration of Medical Cases. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture.—Mr. Malcolm: On Fibroids.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Syphilis: I., Miliary and Primary Invasion (Constitutional and Local). (Cheslerfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture.—Mr. J. Berry: The Surgery of Pulmonary Cavities. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture.—Dr. F. J. Poynton: Some Hepatic Affections in Children.

FRIDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. A. Lawson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. B. J. Reece: Food and Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture.—Dr. Batten: Myasthenia Gravis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Clinical Lecture.—Dr. G. N. Meschen: Acne and its Treatment.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Prof. S. P. Thompson: The Electric Production of Nitrates from the Atmosphere.

ATURDAY (3rd).—ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M. Mr. J. W. Gordon: Advances in Microscopy. (Lecture I.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

THE LANCET AT THE RAILWAY BOOKSTALLS.

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls, Messrs. W. H. Smith and Son's connexion with them having now terminated.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsgagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	 £1 12 6	One Year	 £1 14 8
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Three Months	 0 8 2	Three Months	 0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 25th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-Fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 19	29.93	NNW	...	67	44	39	38	41	Cloudy
" 20	30.55	W.	...	55	51	33	32	34	Foggy
" 21	30.05	W.	0.09	53	45	34	40	42	Cloudy
" 22	30.43	N.E.	0.02	54	41	37	35	37	Cloudy
" 23	30.63	S.W.	...	39	39	33	34	35	Foggy
" 24	30.53	S.W.	...	46	46	34	35	36	Overcast
" 25	29.76	S.W.	0.32	50	49	36	46	46	Raining

During the week marked copies of the following newspapers have been received:—*Siam Observer*, *Sierra Leone Weekly News*, *Express and Echo* (Deron), *Army and Navy Gazette*, *Islington Gazette*, *Hamptstead Express*, *Globe*, *Belfast Whig*, *Birmingham Weekly Post*, *Sun*, *Sheffield Telegraph*, *Glasgow Citizen*, *Yorkshire Observer*, *Leicester Advertiser*, *Portsmouth Independent*, *Newcastle Chronicle*, *York Herald*, *Notts Express*, *Bury Times*, *Middlesex County Times*, *Manchester Guardian*, &c.

pot is returned to its normal position. The infusion is thus separated from the leaves, the latter being held up in the infuser at the top of the teapot. This arrangement not only prevents a prolonged stewing of the tea but it provides also for the retention of the bouquet and fragrant qualities of the tea, for although the leaves are withdrawn from the water they are left inside the closed teapot. The "S Y P" teapot may be obtained from the Inventors and Investors' Corporation, Limited, of 35, Bucklersbury, Bank, E C

MARRIED COUPLES "WITHOUT INCUMBRANCES"

His honour Judge Emden recently had a witness before him in a case at the Lambeth county court who spoke of a man and his wife as being "without incumbrances," upon which the judge said "I presume you mean children when you speak of incumbrances," and added when the witness assented "Say children, then. To refer to children as incumbrances either in speaking or in advertisements for persons wanted to fill situations is only helping the present decline in the birth rate." He might have added that the too general practice to which he thus alluded of excluding married people with families from the opportunity of earning their livelihood encourages the pernicious traffic in pretended abortifacients as well as the actual perpetration of the crimes of procuring abortion and child murder.

THE SPARKLET SELTZOGENE

Those who have had occasion to use the old form of seltzogene with its effervescing powders will easily recognise the advantages offered by the new sparklet seltzogene or sparklogene. To begin with, the effervescing powders are dispensed with altogether in the sparklogene, and when we recall the trouble involved in placing powders in the upper container, in keeping particles of them out of the aerated liquid, in removing the liquid products of interaction when the seltzogene required to be re-charged, and in preventing the powders evolving gas before the seltzogene could be closed, it must be owned that a very decided advance has been made by the substitution of a sparklet for the purpose of aeration. Moreover, the time occupied in the preparation of an aerated water in the sparklogene is very much shortened, and, in fact, three pints of aerated water may be made ready for consumption in less than five minutes, although, of course, the aeration is very much improved by longer contact of the water with the gas. Three large-sized sparklets are sufficient for the aeration of three pints of water. When the gas is completely discharged from the first sparklet it is taken out after shaking the water and gas together for a few minutes, and replaced by another one, and so on until the contents of three sparklets are discharged. By means of a valve close to the "piercer" the water under pressure is prevented from escaping. When the aeration is completed the sparklet and sparklet-holder are removed and a metal cap put in their place. There is thus no contact of the aerated water with the metal of the sparklet, which at one time gave rise to some of the iron dissolving in the water and communicating to it an inky taste and a turbid appearance. The sparklogene is very convenient for the preparation of aerated mineral waters for medicinal use, such as soda, potash, or lithia water, tablets of the carbonates of these bases being supplied for the purpose. We found the apparatus to work most satisfactorily and the claims made in favour of its advantages are by no means exaggerated. The makers are Aerators, Limited, Upper Edmonton, London, N.

"MORTON'S NEURALGIA."

A CORRESPONDENT writes to us for information as to the treatment of a case of "Morton's neuralgia." This title, otherwise metatarsalgia, is the name given to a painful affection of the foot in which one or more of the digital nerves are pressed upon by the heads of the metatarsal bones. To deal successfully with this condition it is necessary to recognise that the pressure of the metatarsal bones is increased by anything which tends to narrow the anterior part of the foot or to flatten the plantar arch. Therefore boots which are too narrow at the heads of the metatarsal bones should be avoided. In some cases firm bandaging or strapping of the foot at the level of the bases of the metatarsal bones will afford great relief, for this constriction of the bases of the metatarsal bones will tend to separate their heads. In other cases the use of a suitable "vaigus pad" will remove the pain entirely. Care is sometimes required in adopting the vaigus pad to the exact needs of the individual foot but the relief generally obtained is well worth a little trouble. It must not be forgotten that the name of Morton's disease is sometimes applied loosely to any painful affection of the foot.

COMPRESSED SANITARY TOWELS

Messrs Burroughs, Wellcome, and Co. have issued some very convenient compressed sanitary towels for ladies. They are put up in sealed packages and take up but a very small space owing to the great compression to which they have been subjected. They expand thoroughly and well and should prove of benefit to travellers as a large number of them can be carried in a comparatively small space.

M. A. R.—I. We do not think the second call is necessary. 2. We think that further overtures should come from the older residents. There are no hard and fast lines about these matters and our correspondent will probably find that as time goes on through the acquaintances whom he has made he will meet his other colleagues. COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS

METROPOLITAN HOSPITALS

MONDAY (29th)—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (30th)—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (31st)—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (1st)—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (2nd)—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural 2 P.M.).

SATURDAY (3rd)—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.) and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES

WEDNESDAY (31st)—SOCIETY OF ARTS (John-street, Adelphi, W.C.)—8 P.M. Paper:—Mr T. Adams. The Garden City and the Cottage.

BRITISH BACTERIOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.)—5 P.M. Paper:—Dr A. Morrison. The Present Position of the Treatment of Cardiac Disease by Baths and Exercise.—(If time permits) Dr Braithwaite (Buxton): Cases treated at the Devonshire Hospital by the Buxton Waters.

THURSDAY (1st)—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.)—8.15 P.M. Annual General Meeting. Election of Officers. 8.30 P.M. Paper:—Mr Bateson. Mendelian Heredity and its Application to Man.
NORTH EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.)—4 P.M. Dr A. J. Whiting and Dr G. Basil Price. Clinical and Pathological Demonstration (Illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

MONDAY (29th)—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.)—4 P.M. Mr G. Fernet: Clinique (Skin). 5.15 P.M. Lecture.—Dr L. Williams. The Therapeutics of Some Common Affections.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith road, W.)—5 P.M. Dr Saunders: Functional Nervous Diseases of Children, with Cases.

TUESDAY (30th)—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.)—4 P.M. Dr R. Abraham: Clinique (Medicine). 5.15 P.M. Lecture.—Dr G. S. Middleton (Glasgow). Remarks on the Diagnosis of Pleural Effusion and of Empyema.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith road, W.)—5 P.M. Mr Dunn. Cancer in its various Forms.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen's-square, Bloomsbury, W.C.)—3.30 P.M. Clinical Lecture.—Dr Batten: Cerebellar Disease.

NORTH EAST LONDON POST-GRADUATE COLLEGE (Colney Hall Asylum, New Southgate, N.)—3.30 P.M. Dr H. Corner: Demonstration on States of Mental Weakness.

WEDNESDAY (31st)—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.)—4 P.M. Mr P. L. Daniel: Clinique (Surgical). 5.15 P.M. Lecture: Dr P. Stewart: Disorders of Articulation.

Three Clinical Lectures

ON

THE "ACUTE ABDOMEN."

*Delivered at St. Thomas's Hospital*By WILLIAM HENRY BATTLE, F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL.LECTURE II.¹*Delivered on Nov. 24th, 1905.*

PATHOLOGICAL PERFORATIONS OF THE DIGESTIVE TRACT.

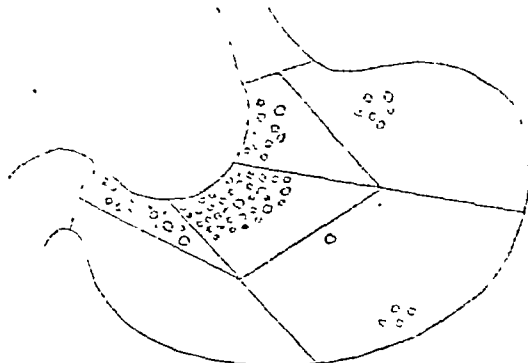
GENTLEMEN,—In considering the perforations of ulcers of the digestive tract that give rise to the "acute abdomen," it is not proposed to include those which take place at the site of a malignant growth but only those which are known as simple—the sudden giving way of ulcerations of the stomach or bowel into the general peritoneal cavity. It is not my intention to inquire closely into the cause of these ulcerations; this is fully discussed elsewhere and is beside the present question.

GASTRIC ULCERS.

In the autumn of 1894 Mr. A. Pearce Gould² opened a discussion at the annual meeting of the British Medical Association at Bristol on the surgical treatment of simple ulcer of the stomach and duodenum, and typhoid ulceration of the ileum and colon. This debate did a great deal to encourage this branch of surgery in this country and clearly defined the steps of the operation which are essential when any of these ulcers have perforated. There is no doubt that the profession has been much indebted to Mr. Gould for the able manner in which he brought forward this subject, for it did much to encourage operative treatment as a matter of routine. At that time the introducer of the discussion only knew of seven cases of successful operation for the perforation of a gastric ulcer. At the present time the diagnosis and main principles of treatment are so well understood that no surprise is expressed when recovery follows operation. Success is usual and depends more on the individual patient and the time which has elapsed since the perforation took place than on anything else.

In the volume of the St. Thomas's Hospital Reports for 1904 will be found a paper by Mr. P. W. G. Sargent on "Pathological Perforation of the Stomach and Duodenum" founded on 125 cases which have been treated in St. Thomas's Hospital. The series includes seven cases in which perforation complicated carcinomatous ulcer, 20 in which the peritonitis was localised to the neighbourhood of a chronic gastric ulcer, and two in which this limited inflammation complicated chronic duodenal ulcer. This leaves us with 74 perforations of gastric ulcer (four of them acute) and 21 perforations of duodenal ulcer (three of which were acute) in which there was more or less diffuse peritonitis. He reminds us that the first operation for perforation of a gastric ulcer in St. Thomas's Hospital was done in 1892. This was not successful but in August, 1896, a success was obtained for the first time. Altogether, up to the end of 1904 49 cases had been submitted to operation, the ulcer being treated by suture and the peritoneum washed out. 58.1 per cent. of them recovered. The average time in the successful cases that had elapsed between perforation and operation was 23 hours; in the fatal cases 32.6 hours. I am permitted by Mr. Sargent to reproduce an illustration which shows very clearly the position of the ulcer in 77 examples of perforation and you will notice how much more frequent the perforations are on the anterior than on the posterior surface. His series thus confirms the recognised fact as to the greater frequency of perforations on the anterior surface, these being—anterior 66, represented by black dots (the difference is not well marked in the illustration); and posterior 11, represented by circles (see illustration). The results of operation in the second half of the period which he has selected are better than in the first. Cases are recognised and sent into hospital earlier and operation is more quickly and surely performed.

In these cases the symptoms, which are grouped under the word peritonism, are usually very marked and the signs of distress are unmistakable. There is considerable variation as regards the amount of shock; sometimes it is so excessive that nothing can save the patient. Shock is followed by collapse and the patient dies in a few hours without response to medical treatment. Only this autumn a girl was admitted under the care of Dr. H. W. G. Mackenzie with a history of sudden seizure of pain in the region of the stomach so severe that she screamed out and had to be carried home from the tram out of which she had just alighted. When seen at the hospital about an hour later the diagnosis of gastric perforation was confirmed but the



state of shock was so profound that every means to combat this was tried, including saline infusion into the veins, but without success, and the patient died within six hours of the perforation. She was quite unconscious and made no resistance to abdominal examination, nor did she complain of pain. There was a large perforation of about the size of a penny in the anterior wall of the stomach near the pylorus. A curious fact, noted by Dr. W. H. Harnwood-Yarred was the presence of extensive gaseous emphysema of the body a few hours after death.

As a rule the patient rallies from the shock satisfactorily and other symptoms develop, which resemble very much those met with in perforations of other parts of the digestive tract. In gastric and duodenal cases, perhaps more than in others, the previous history is of importance, especially if morphine has been given to relieve the pain. There is nothing like morphine to mask symptoms and many a case has been lost owing to the injudicious administration of the drug in an attempt to relieve the pain at all costs. It is not wrong to give this drug when the diagnosis has been made and the course of action decided upon but there must be no going back because the patient "appears" better. In a large percentage there is vomiting after the perforation but the absence of vomiting is not against the diagnosis of perforation.

Probably there is no form of the acute abdomen in which there is a greater amount of fluid to be found free in the peritoneum; at the operation only a few hours after the accident had happened one has been surprised to find the flanks and pelvis full of a thin greenish fluid, acid and sour-smelling. This statement applies to cases in which the stomach was comparatively empty at the time as well as to those in which the perforation followed a large meal. Much of it is doubtless of a protective character thrown out from the surface of the bowels and omentum in response to the irritation of the acid contents of the stomach. In this respect it resembles very closely the condition which obtains soon after the sudden rupture of the wall of an appendix abscess and the escape of the pus into the peritoneum. Rigidity of the recti muscles in the upper part of the abdomen will be present with great tenderness in the epigastric region.

In any case in which there is a difficulty in diagnosis between a perforated gastric ulcer and an acute diffuse peritonitis secondary to a gangrenous appendix the presence of much free fluid within a few hours after the accident should give a strong leaning towards the stomach as the origin of the symptoms. A tympanitic note over the liver region in an abdomen which is not distended is a very important sign of intestinal perforation and is very commonly observed in gastric perforations soon after the

Lecture I. was published in THE LANCET of Jan. 27th, 1906, p. 201.
² THE LANCET, August 6th, 1894, p. 291.

Communications, Letters, &c., have been received from—

A.—Mr. O. Anderson, Blackpool; *American Journal of Surgery*, New York, Editor of; Austrian Travel and Information Bureau, London; Messrs. Allen and Hazbary, London.

B.—Mr. F. E. Bennett, Margate; T. B. Browne, Ltd., London; Beckett Hospital, Barnsley; Secretary of; Surgeon-General G. Bidle, C.I.E., Bridge of Allan; Mr. W. R. Barlow, London; Messrs. Burton, Goldsmith and Co., London; Bayer Co., London; Dr. Byrom Bramwell, Edinburgh; Mr. W. Bruce, Edinburgh; Mr. W. H. Battle, London; Mr. M. Blok, London; Messrs. Brady and Martin, Newcastle-on-Tyne; *The British Journal of Photography*, London; Editors of; Dr. Dudley Burton, London; Professor Miguel Bombarda, Lisbon; Messrs. Brand and Co., London; Dr. G. Bontros, Mansourah.

C.—Dr. George Carpenter, London; Dr. J. M. Clarke, London; Messrs. Chivers and Sons, Histon; Messrs. A. Constable and Co., London; Messrs. Condy and Mitchell, London; Mrs. M. Cornwall, Bournemouth; Dr. C. H. Cattle, Nottingham; Mr. H. Carpenter, London; Dr. T. C. Clapham, London; Messrs. Crossley and Co., London; Mr. Cotes-Freedy, London.

D.—Mr. R. Demuth, London; Dr. T. Vincent Dickinson, London; Dr. W. G. Dickinson, London.

E.—Messrs. Eastman and Son, London; *Experientia Docet*; Dr. W. McAdam Eccles, London.

F.—Mr. J. Tregelles Fox, Leeds; Dr. Alexander Forsyth, Leytonstone; Dr. A. W. Fuller, London; Dr. David Ferrier, London; Mr. T. Hallett Fry, London.

G.—Mrs. Gondoux, Villeneuve, Switzerland; Messrs. Gröschel and Koch, Ilmenau, Germany; Messrs. W. Green and Sons, Edinburgh; Gloucester General Infirmary, Secretary of; Messrs. W. Gaymer and Sons, Attleborough; Dr. A. Knyvett Gordon, Newton Heath; *The Gyroscope*, London; Editor of; Mr. B. Kirkman Gray, London; Dr. Stanley Green, Lincoln.

H.—Mr. G. Husain, Wazirabad; Messrs. Haywood and Co., Bristol; Mr. T. Harling, Blackburn; Dr. Francis Hare, London; Miss Homersham, London; Mr. B. Herder, Freiburg; Messrs. T. Holland and Son, London; Mr. W. G. Hayden, Walkern; Messrs. J. Hall, jun., and Co., London; Heigham Hall, Norwich; Captain J. H. Hingo, I.M.S., Olliton; Mr. Noel A. Humphreys, Surbiton.

I.—Institute of Chemistry of Great Britain and Ireland, London; Registrar and Secretary of.

J.—J. T.

K.—Mr. David Keele, London; Kent and Canterbury Hospital, Secretary of; Kreschyslo Co. Ltd.; Kettering Urban District Council, Medical Officer of; Dr. M. A. Key, Southsea.

L.—Messrs. Lloyd and Co., London; Messrs. Lee and Nightingale, Liverpool; Leeds General Infirmary, Manager of; Leeds Public Dispensary, Secretary of; London Association for the Pre-

vention of Premature Burial, Secretary of; Leeds and West Riding Medical-Chirurgical Society, Junior Secretary of; Surgeon G. Murray Levick, R.N.; *The Law Journal*, London; Messrs. Lea Bros. and Co., New York; Local Government Board, London; Medical Department of the Medical Officer of; Leicester Infirmary, Secretary of; The Library Supply Co., London.

M.—Dr. R. A. Macneill, Surbiton; Dr. Helen MacMurchy, Toronto; Mr. B. W. Murray, Liverpool; Medical Society of London, Registrar of; Dr. William Martin, Newcastle-on-Tyne; Medical Society of Victoria, Melbourne, Hon. Treasurer of; Maltine Manufacturing Co., London; Medical Supply Association, London; *Mexborough and Swinton Times*, Mexborough; Manager of; Mr. H. Madoery, Basle; Messrs. J. F. Macfarlane and Co., London; Mr. R. Mosse, Berlin; Dr. Charles Mercier, London; Dr. John A. O. Macewen, Glasgow; Dr. P. W. Macdonald, Dorchester; Dr. H. O. Marr, Woodilee; Dr. A. N. McGregor, Glasgow; Monarch Typewriter Co., London.

N.—Mr. M. J. Nolan, Downpatrick; North London Medical and Chirurgical Society, Hon. Secretary of; Nottingham City Asylum, Clerk of; Neurological Society of the United Kingdom, London; Hon. Secretary of; Mrs. M. E. Newman, London; Mr. H. Needes, London; Mr. J. C. Needes, London.

O.—Odol Chemical Works, London.

P.—Dr. J. S. Purdy, Port Said; Dr. Llewellyn Phillips, Cairo; Mr. Y. J. Pentland, Edinburgh; Dr. Eldon Pratt, Hensfield; Dr. F. Cecil H. Piggott, Teignmouth; Dr. O. B. Page, Boston; Mr. T. Popkin, London; Dr. Percival, Newcastle-on-Tyne.

R.—Mr. H. Powell Rees, London; Messrs. Richardson and Co., London; Dr. G. W. Rees, London; Dr. Miguel y Ramon, Valladolid, Spain; Mr. A. Röhl, London; Mr. A. Rivers-Wilson, Oxford; Dr. John Robertson, Birmingham; Dr. Arthur Robinson, Edgbaston; Rebmam, Ltd., London; Royal College of Physicians of London, Bedell and Secretary of; Royal Sanitary Institute, London, Secretary of; Mr. S. Ramsbottom, Pilling; Royal Academy of Medicine in Ireland; Dr. D. Lloyd Roberts, Manchester; Mr. Oswald Roberts, London; Messrs. Reynell and Son, London.

S.—Mr. H. Sturmer, Coventry; Mr. P. J. Scrimgeour, Dundee; Salter Typewriting Co., Birmingham; Messrs. E. Shaw and Co., Manchester; Sheffield Royal Hospital, Secretary of; Mrs. Skinner, Winchelsea; Staff Surgeon; Staudstreet, R.N., Weymouth; Colonel W. F. Stevenson, R.A.M.C., St. Heliers; Messrs. Street and Co., London; Dr. H. Batty Shaw, London; Mr. J. B. Sowerby, London; Messrs. Stevens and Haynes, London; Society of Members of the Royal College of Surgeons, London; Secretary of; Society of Apothecaries of London, Secretary of; Mr. H. S. Singleton, London, Dr.

Arthur Sellers, Withington; Dr. T. Shennan, Edinburgh; Dr. Henry Simpson, Conway; Messrs. Squire and Sons, London; Messrs. Sharland and Co., London; Smith's Advertising Agency, London; Messrs. B. G. Saward and Co., London.

T.—Dr. E. F. Trevelyan, Leeds; Mr. Harold B. Turner, London; The Travel Bureau, London.

V.—Vinolia Co., London.

W.—Dr. Forbes Winslow, London; Dr. J. Wheatley, Shrewsbury; Dr. Francis Warner, London; Dr.

V. H. Wyatt Wingrave, London; Messrs. Willows, France, Butler, and Thompson, London; Wakefield Publicity Co., Manchester; Dr. F. J. Wain, London; Williamson's Advertising Agency, London; Mr. C. O. Wampach, Folkestone; Mr. J. Williams, Bradford; Dr. J. Weidich, Walsley; Wetherhampton General Hospital; W. J. R. Messrs. Wilson and Son, London; Miss L. W. Wolf, Dublin; Dr. S. M. H. Wall, Wiltshire; Mr. J. Wetmore, land, Macclesfield.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. F. O. Abbott, Blitchington; Dr. W. W. Anderson, Ballachulish; Mr. E. Arnold, London; Mr. S. Appleton, London; Mr. A. Allen, Solva; A. L.; A. H. G.; *Accrington Observer*, Manager of; A. P.

B.—Mr. H. R. H. Bigg, London; Messrs. Bullock and Co., London; Dr. J. H. Broadbent, London; Dr. H. S. Branfoot, Brighton; Dr. A. Bronner, Bradford; Dr. F. T. Bibby, Flesherston, Canada; Mr. R. J. Behrendt, Scunthorpe; Messrs. Bedford and Co., London; Messrs. J. H. Bocky and Son, London; Mr. J. B. Banks, London.

C.—Dr. A. R. Curver, Torquay; Mr. C. N. Chaborn, Hove; Mr. R. A. Caldwell, Bournemouth; Messrs. E. Cook and Co., London; Dr. T. Curruthers, Kilbarchan; Dr. G. S. Carmichael, Edinburgh; Dr. W. S. Campbell, Whitley Bay; C. F. S.; Obeltenham General Hospital, Secretary of; C. P. H.; Dr. S. R. Collier, Wimbeldon.

D.—Messrs. Down Bros., London; Doctor, Liverpool; Derbyshire Royal Infirmary, Secretary of; Messrs. W. Duff and Co., London; Mr. C. M. Davidson, Ruskington; Dublin School of Physic, Secretary of.

E.—Dr. L. Edmonds, Penikese Island, U.S.A.; Mr. H. S. Elworthy, Victoria, Monmouthshire; Mr. B. M. Bntage, Bradworthy; E. H.

F.—Mr. H. A. Fotherby, Headcorn; Mr. J. Flach, London; F. L.; F. G.; Messrs. Feeney and Co., Birmingham.

G.—Mr. E. Goody, Llandudno; Mr. W. P. Grant, Rochdale; Mr. J. W. Griffin, King's Heath; Messrs. Guyot, Guisain, and Son, London; G. N. D.; Gurnsey, Medical Officer of Health of; Mr. H. G. Gurnell, Peterchurch; Dr. H. W. Gardner, Shrewsbury; Messrs. Gillyard Bros., Bradford; Messrs. R. W. Greff and Co., London; Lieutenant C. A. Gill, I.M.S., Jullundur, India.

H.—Miss E. Harris, Leicester; Mr. C. B. Hall, London; Mr. W. B. Heyward, Launceston, Tasmania; Messrs. Hastings Bros., London; Dr. C. D. Haldwell, Wakefield; Dr. W. S. Handley, London; Dr. C. Heston, Westgate-on-Sea; Messrs. Heal and Son, London; Hull Corporation, Treasurer of; Messrs. Hogg and Son, London; Mr. E. Hempsted, Kintbury; H. F. C. M.

I.—Incorporated Medical Practitioners Association, London, Secretary of; I. W. J.; Incorporated Society of Trained Masseuses, London, Hon. Treasurer of.

J.—Messrs. Jenner and Price, Hove; J. F. R.; J. W. L.; J. R.; J. C. P.; J. H.; J. B. C.; Dr. R. Johnston, Dundee; J. F. W. K.—Mr. J. Kelly, Valhalla, Spain; Dr. C. F. Knight, Portofino; Messrs. Kilner Bros., London.

L.—Mr. H. K. Lewis, Irish; Mr. E. P. Leavy, Genk, Queensland; Locum, Trench Heath.

M.—Mr. R. Machin, London; Dr. G. W. F. Macnaughton, London; M. L.; M. D. Wain; Messrs. J. Menzies and Co., Edinburgh; Manchester Hospital for Consumption, Secretary of; Medical Supply Agency, Delhi; Manchester Royal Infirmary, Secretary of; Mr. T. W. Matheson, Bournemouth; Mr. P. Martin, Banbridge; Messrs. J. Menzies and Co., Glasgow; Medical, Ekenau, Fentley.

N.—New York Post-Graduate Medical School, Secretary of; N. W. A.; Northern Medical Association, Glasgow.

O.—Mr. O. A. F. Osburn, Norwich; Dr. Cyril Ogle, London.

P.—Miss Ethel Phillips, Chorley; Miss A. Pearson, Great Yarmouth.

R.—Dr. L. Roberts, Liverpool; Dr. S. W. Robinson, Montevideo, Argentine Republic; Caseros, Argentine Republic; Royal Medical and Chirurgical Society, London; Secretary of; Messrs. Rising Bros. and Co., London; R. W. B. R.; Dr. A. C. Russell, London; Mr. W. R. Northampton; R. W. E. B.; Mr. E. B. Robertson, St. Mary Church.

S.—Mr. A. Sieger, Greenock; Messrs. Spiers and Pond, London; Messrs. A. Spring and Co., Hull; Messrs. T. and H. Smith and Co., London; Rev. A. Sinker, London; Mr. Morton Smale, London; G. H. Salter, Ballan, Australia; Saarbach's News Exchange, Mainz, Germany; Salford Lodge, Brighton, Lady Superintendent of; Salford Royal Hospital, Secretary of; Mr. L. Saunders, Okehampton.

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to that performed by Quenu. In both cases a similar resection of the ulcerated bowel was performed, the jejunal end being placed into the stomach and the duodenal into the side of the jejunum lower down.

The two cases which came under treatment by me were as follows:—

CASE 1.—The patient, a man, aged 30 years, was admitted to City Ward, St. Thomas's Hospital, on July 15th, 1904, for acute abdominal distress. He stated that about four hours before admission he had been seized with violent pain in the abdomen, vomiting, and hiccup. A medical man who was called in sent him to the hospital. On admission the abdomen was moderately distended and did not move on respiration. A rounded prominence was visible in the epigastrium, and immediately below this another and smaller prominence, the latter being situated just above the umbilicus. Distension was most marked in the epigastric and umbilical regions and there was obvious fulness of the flanks. There was no hyperæsthesia of the skin, but considerable, yet not intense, tenderness. No definite tumour could be felt. The resonance was impaired in both flanks, but no fluid thrill could be felt nor was the dullness a shifting one. Elsewhere the note was of a tympanitic character, this being especially marked in the epigastric region. The liver dullness was entirely obliterated, the note over the region of the liver being decidedly tympanitic. The general condition of the patient was good. The temperature was 98° F., the pulse was 100, and the respirations were 20.

The presence of a scar in the abdominal wall caused questions to be asked about previous operation and the following history was obtained, some of which was subsequently verified. He had suffered from indigestion after he became 16 years old and three years ago he was much troubled with vomiting from a quarter of an hour to two hours after food and on one or two occasions he brought up blood. 22 months previously he underwent an operation in Queen's Hospital, Birmingham, for pyloric obstruction after gastric ulcer. Anterior gastro-enterostomy was performed, a Murphy's button being used to approximate the parts. His progress after this operation was uninteruptedly good until March 4th, 1904, when he was seized with pain in the abdomen and he had to go into the hospital again for "obstruction"; at this operation the Murphy's button was removed.

An incision was made immediately to the right of the middle line above the umbilicus through the rectus sheath, the muscle being temporarily displaced outwards. There was a rush of gas when the peritoneum was opened and a greatly distended coil of bowel presented below the wound; this was punctured and emptied of much gas. The opening was closed with Lambert silk sutures and the coil was returned. The stomach, which was much distended, was drawn into the wound; the point of attachment of the small intestine to the gastric wall was defined and a small round perforating ulcer, about a sixth of an inch in diameter, was located in the anterior part of the jejunum at a distance one and a quarter inches from the point of attachment of the latter to the stomach. The stomach and the upper part of the jejunum were as far as possible emptied of gas through the ulcer and this was then turned in with a single row of Lambert's sutures. The coils of jejunum in the immediate neighbourhood of the perforation were greatly distended, thickened, and of a dull red colour. A small amount of free purulent fluid was present in the abdominal cavity with patches of lymph on the intestinal coils. A second incision was made in the middle line above the pubes and the peritoneal cavity was thoroughly irrigated with normal saline solution. A Keith's drainage-tube was then inserted into the privis through the lower incision and the upper wound was closed. The man's general condition at the end of the operation was good.

There is not much to record in the after progress of the case. The patient was sick three times during the night following the operation, bringing up each time large quantities of greenish fluid. In the morning a turpentine enema was administered with a very good result. Sulphate of magnesia (two teaspoonfuls) was given every four hours. The abdomen was very slightly distended and not very tender; it moved to some extent with respiration, though not freely. The pulse was 104 and the respirations were 20. The bowels acted again on the following day, the abdominal distension subsided, the man became much more comfortable, and towards night the sickness ceased. The Keith's tube was replaced by a rubber one of smaller size, there

being very little discharge. Two days later this was removed altogether. He left the hospital on August 8th, having completely recovered.

The second case was very similar but the symptoms were much less acute at the onset. The previous history was a very interesting one.

CASE 2.—The patient, an unmarried woman, aged 37 years, was sent to the hospital by Mr. J. Scott Battams and admitted under the care of Dr. Mackenzie on March 25th, 1903, with symptoms of perforated gastric ulcer, which had commenced four and a half hours before. Operation was performed by me at 11.15 P.M. and an ulcer near the pylorus and on the anterior surface was found and sutured, the peritoneal cavity was washed out, and the pelvis was drained. At the operation it was noted that there was a good deal of cicatricial narrowing of the pylorus. She left hospital on May 12th and continued well until October, after which her gastric pains recurred. She was re-admitted in April, 1904, and anterior gastro-jejunostomy was performed. The stomach was dilated, the lower border reaching the level of the umbilicus. The pylorus was much strictured. The operation was on the 8th and she left hospital on April 28th.

The patient appears to have done very well afterwards and regarded herself as cured until May, 1905, when she was again sent to the hospital by Mr. Battams. About six hours before admission on May 5th she had a severe attack of pain, especially in the right side of the abdomen, with vomiting. The bowels had acted twice on that day. When examined in the ward the abdomen did not appear to be distended and moved freely in respiration. The liver dullness was normal and there was normal resonance in other parts. The pulse was 72; it was good and strong. The temperature was normal. There was, however, slight tenderness all over the abdomen with more evident tenderness above, and to the left of, the umbilicus. She vomited two or three times during the night; on the morning of the 6th the temperature had been up to 99.4° F. and a distended coil of small intestine was seen above, and to the left of, the umbilicus. There was tenderness as before but it was more marked over the distended coil. When seen by me at 2 P.M. the condition was much as above described but the distension of the small intestine in the umbilical region was greater and there was visible peristalsis.

Operation was performed 23 hours after the first onset of pain, the abdomen being opened through the left rectus sheath about an inch from the middle line. A red and distended coil of small intestine presented which traced upwards led to the old gastro-enterostomy junction; from this a greatly distended coil passed downwards, on the anterior aspect of which, one and a half inches from the line of junction, was a somewhat rounded opening from which gas and intestinal contents were escaping. The coils near were much thickened, cedematous, and distended, there being lymph on the surfaces near the perforation. A knife was introduced through the ulcer and a cut was made upwards, so that the line of junction between the stomach and intestine could be explored; the finger passed easily into the stomach and then into the jejunum beyond the line of junction. There had been no contraction of the openings. The continuous silk suture which had been employed to unite all the coats of the stomach and intestine was felt lying partly detached, and removed. It was apparently unaffected by the action of the gastric juice. After the distended coils had been emptied, the incision was closed with silk Lambert sutures, and the intestines were washed with sterilised saline solution. A second incision was now made in the middle line above the pubes through the old scar and the pelvis was emptied of a small amount of purulent fluid which was not of offensive odour. It was well cleansed with sterilised saline solution and both wounds were then sutured without drainage. Shock was counteracted by the administration of half a pint of saline solution per rectum every two hours. The patient soon rallied from the shock and complained of no pain. Progress was satisfactory until May 11th when she vomited once. She vomited several times on the 18th, and again on the 17th, and on this date the pulse was quick and feeble. A suggestion was made that there was obstruction of the opening of gastro-enterostomy, but this had already been found to be in a satisfactory condition. Her temperature was normal, the abdomen moved well and was without distension. Rectal feeling and washing out of the stomach sufficed and no vomiting occurred after May 20th, when she was allowed to

sudden onset of pain. Its absence must not, however, be regarded as a reason for postponing operation in a case otherwise calling for it. It was not present in the following instance of severe perforation in which the accident occurred although the patient was under exceptionally advantageous conditions, the stomach having had rest for two days.

A man, aged 48 years, was admitted under the care of Dr. Mackenzie on Sept. 30th, 1904, with symptoms of gastric ulcer. The history of the case was that he had been often sick in 1902 and 1903. Vomiting occurred about half an hour after food and the vomited material was very acid. In January, 1904, he vomited a large amount of blood which was very black; this vomiting recurred a few days after. In July he had a similar attack of hæmatemesis. When admitted he was suffering a good deal from pain in the epigastric region and was obliged to lie on the left side. The abdomen was normal in appearance and with the exception of tenderness in the epigastrium was without evidence of disease. He was unable to keep down milk sometimes. In the next few days he complained at times of severe local pain and hot fomentations were required for his relief. Vomiting also occurred at intervals. On Oct. 22nd it was decided to put him on rectal feeding and to give nothing by the mouth. At 2 A.M. on the 24th he had a severe attack of pain, perspired very freely, and his pulse rose to 120. When seen with Dr. Mackenzie 12 hours later he was evidently suffering acutely. Lying on his back with head and shoulders raised, he looked pale, agitated, and intensely anxious, whilst his face and forehead were covered with sweat. His respirations were hurried, painful, shallow, and irregular, the pulse was rapid, and he complained much of pain in the abdomen. He was unable to take a deep breath on account of the pain, and on examination of the abdomen it did not move much with respiration. It was generally tender, rigid, and rather distended. The liver dulness had not disappeared; there was dulness in both flanks and also across the lower abdomen above the pubes. He had vomited. The temperature was 100.6° F.

Operation was performed as soon as possible. On opening the peritoneum there was a flow of greenish thin, sour-smelling fluid. The stomach was somewhat adherent to the under surface of the liver and when they were separated by the finger there was a gush of free gas. The finger was passed to the pyloric region at once because of the diagnosis of perforation of ulcer in that situation made out by Dr. Mackenzie. A sharply cut ulcer, large enough to admit the forefinger, was found on the anterior surface of the pyloric end of the stomach. The stomach wall round this perforation was much thickened. The opening of the ulcer was closed. The peritoneal cavity appeared to be filled with the greenish fluid, there being large collections in the pelvis, the flanks and the sub-hepatic and splenic regions. A counter opening was made above the pubes and the whole abdomen was thoroughly irrigated with normal saline solution. The intestines were not much distended. The deposit of lymph was limited to the parts around the perforation. Normal saline solution to the amount of two pints was passed into the median basilic vein during the operation as the pulse became very feeble and rapid. The stomach was a good deal dilated. The upper wound was closed and a glass drain was placed in the lower one. Recovery was slow but satisfactory and he left on Dec. 7th for his home in the country. From recent accounts it is probable that he is now suffering from pyloric obstruction and dilated stomach; indeed, it would be very strange if he escaped this complication, for the nature of the ulcer compelled the infolding of an unusual amount of stomach wall.

PERFORATIONS OF DUODENAL ULCERS.

These ulcers are far less frequently met with than the gastric and it is not always possible to diagnose the one from the other. They are far more common in males. Osler³ says that they may be distinguished by the following definite characters: "(a) Sudden intestinal hæmorrhage in an apparently healthy person which tends to recur and produce a profound anemia. Hæmorrhage from the stomach may precede or accompany the melæna. (b) Pain in the right hypochondriac region, coming on two or three hours after eating. (c) Gastric crises of extreme violence during which the hæmorrhage is more apt to occur. Certainly the occurrence of sudden, intestinal hæmorrhage with gastralgi-

attacks is extremely suggestive of duodenal ulcer." Unfortunately, in many cases there is no history of local pain preceding the acute attack.

From the surgeon's point of view these cases are especially interesting because it is frequently very difficult to distinguish perforations of these ulcers from acute disease of the appendix with peritonitis, especially if the appendix is situated to the outer side of the cæcum or has never attained its proper position in the iliac region. "When the ulcer is in the stomach the signs are those of a general peritoneal involvement; when the ulcer is duodenal the course taken by the extravasated fluids leads to a more acute and earlier involvement of the peritoneum on the right side and in the right iliac fossa. The clinical picture of appendicitis is expressed with such accuracy that of 49 recorded cases, in 18 the first incision was made over the appendix after a diagnosis of acute appendicitis had been made." At the time of operation the appendix may be found surrounded by an area of inflamed peritoneum and may be itself so inflamed that the surgeon is misled. It would be well, therefore, to examine the duodenum in its first part when the apparent disease of the appendix is not manifested by gross naked eye change, such as gangrene or perforation.

SIMPLE ULCER OF THE JEJUNUM.

The knowledge that an ulceration of the jejunum is one of the forms of disease of the small intestine which must be considered by the surgeon in the present day was due in the first place to Braun. In 1899 he met with a case in which an ulcer of that part perforated and produced a fatal peritonitis. This ulcer produced symptoms a year after the operation of posterior gastro-enterostomy. Since that time there have been recorded 16 cases in which ulceration of the jejunum has required surgical treatment. In all these there had been a previous operation performed, that of gastro-enterostomy, for the relief of some non-malignant disease of the stomach. To these must be added two more, making a total of 19. I have purposely refrained from using the term "peptic" as applied to these ulcers, for it is not proven that they are all, or any of them, due to the hyperacidity of the gastric juice; indeed, in more than one the state of the gastric juice is described as normal. The appearance of these perforations in the two cases here described was certainly similar to that of some perforated gastric ulcers and perforated duodenal ulcers. They also resembled the ulcers in two cases of perforation of the ileum during the course of typhoid fever, on which operation was (successfully) performed at the request of Dr. Mackenzie; the naked-eye appearances were quite similar. They are probably due to an acute bacterial invasion but I do not think the term "peptic" should be used. It is an interesting fact, however, that they are only met with after the operation of gastro-enterostomy and chiefly after anterior gastro-enterostomy—for example, out of the 19 cases two followed posterior gastro-enterostomy, one the Y operation of Roux, while the particular operation is not given in the account of one case, and no less than 15 followed anterior gastro-enterostomy.

The most fatal complication of jejunal ulcer is acute perforation and in this, as in the other complications, it resembles other simple ulcers of the digestive tract. This occurred in eight instances from ten days to 13 months after gastro-enterostomy. Operation was successful in saving three of them—one treated by Dr. Goepel and two now recorded. A more gradual perforation, with the formation of a localised abscess, was a much less serious occurrence, for in six instances operation was followed by recovery, whilst in a seventh fistula resulted. A successful result also followed in three cases where the progress of the ulceration was more chronic and adhesions of the base to the parts beneath had taken place. The amount of thickening about one of these chronic ulcers and its involvement of surrounding tissues may be extensive.

In a case recorded by Quénn the symptoms of ulcer came on four years after gastro-enterostomy, and at the operation extensive ulceration had passed beyond the bowel into the abdominal wall, its extent being limited by adhesions. In a case under the care of Mr. A. W. Mayo Robson the symptoms were severe and distressing and the local signs were definite, whilst the extent of bowel involved required an extensive operation for the removal of the disease similar

³ Diseases of the Stomach, Mayo Robson, p. 336.

to every medical man. This point of view is the more necessary in the present series, since the notes of the cases were made from a clinical aspect, anatomical and pathological description being conspicuous by its absence. Therefore, leaving out the question of etiology and briefly alluding to a few general facts concerning the cases, attention will be directed to the diagnosis and prognosis, but especially to the treatment, of this condition.

General facts.—In this collection there are 94 cases, of which six mothers died, or 6·3 per cent., whilst of 93 infants 49 died, or 52 per cent. As regards parity, of the 78 cases in which it is mentioned 12 were primiparae whilst 23 had had five labours or more previously. None of the primiparae died, which is a matter of some interest, since King in his series found the mortality of primiparae to be 30 per cent., the general mortality in his collection being 22 per cent. Twin labours occurred twice in the series, of which three infants and one mother died. Recurrence in one case is noted in the three preceding labours. Hydranmios was reported in four cases, two of these being of the ten cases seen personally. Prolapse of the cord happened in three cases out of 54 in which the de Ribes bag was not used and in four cases out of 40 in which it was used. Post-partum flooding was noted in 14 cases, in four of which the placenta was adherent; adherence of the placenta was found in two other cases without post-partum hæmorrhage. There seems to be a peculiar tendency for a placenta with a low implantation to become adherent. In two cases of post-partum hæmorrhage there was atony of the uterus; both died. One case of puerperal melancholia is recorded.

Diagnosis.—Since an early diagnosis is an essential feature in the successful treatment of placenta prævia it is clear that any means of detecting this condition before the os uteri will admit the finger is of great service. Levret more than a century ago noticed that in some cases of placenta prævia the uterus as felt through the abdomen consisted of two parts, the smaller corresponding to the placenta. Spencer, in 1859, was the first to lay especial stress on palpation of the placenta through the abdominal wall as a means of detecting placenta prævia. In Case 62 a doughy mass was felt in the abdomen below the fœtus which was suspected to be placenta; examination per vaginam showed this to be the case, the os here admitting the finger. In Case 2 an indefinite mass was felt in the lower part of the abdomen, also through the vagina; this mass could be felt between the head of the fœtus and the examining finger in the fornix; the os in this case did not admit a finger. After some deliberation this was judged to be placenta and the os was dilated; the placenta was partially prævia. It is necessary that the abdomen should be fairly thin to feel the placenta through it with any degree of certainty. It is interesting to note that flooding may occur from a low implantation of the placenta which may not be perceptible to the fingers until they penetrate a considerable way inside the os uteri. Cases 5 and 61 are examples of this; in both, to judge by the amount of clot which was expelled with the placenta, the hæmorrhage was at first concealed, the flow of blood having stripped the membranes from the uterus until the os uteri was reached when the flooding became manifest externally. Cases 4 and 61 contrast well, since in the former there was no flooding but only early rupture of the membranes, slow labour, and prolapsed cord; the latter, with a very similar position of the placenta, suffered from a great flooding. The severity of the hæmorrhage by no means depends in all cases on the position of the placenta.

Differential diagnosis.—As has been already pointed out, abdominal palpation and bimanual examination before the os admits a finger may prove of great service in the distinction between flooding due to low implantation of the placenta, or unavoidable hæmorrhage, and that occurring when the placenta is situated above that zone, or accidental hæmorrhage. In a stout patient, however, it is necessary to introduce a whole hand into the vagina and a finger into the uterus before the presence or absence of placenta on the lower zone can be ascertained. In a case of rupture of the uterus, the history of labour advancing to the second stage without flooding, the sudden hæmorrhage and disproportionate collapse of the patient, and a bimanual examination revealing recession of the presenting part and probably the fœtus and uterus lying separate to some extent should make the condition fairly clear. At the same time it may be remembered that cases of ruptured uterus complicating placenta prævia have been reported.

As regards flooding from the lower part of the genital

canal—that is to say, cervix, vagina, and vulva, the possible history of injury, the presence of a wound, a growth, or varicose veins will aid in diagnosis. Still, flooding may occur so violently as to endanger life in a few moments and so rapidly as to leave but little time for diagnosis. For this reason I record Case A, in which the flooding and collapse were so sudden that the source of hæmorrhage was not exactly ascertained, though I strongly suspect it to have come from a ruptured varicose vein in the vagina. In this case means were taken to exert pressure on any bleeding point there might be in the genital canal from the upper end of the lower uterine segment down to the vulva.

Prognosis.—The most important factor in the prognosis of these cases is the treatment adopted. This is shown by the great lowering of the death-rate following on a proper appreciation of the causes of bleeding and the adoption of rational means of stopping it—namely, by direct pressure on the bleeding point: an advance which is associated with the names of Legroux, Barnes, Braxton Hicks, Hofmeier, Behm, and others who have adopted their principles and methods. There remain, however, certain conditions outside the power of the medical attendant which influence the prognosis. The maternal death-rate rises with the prolongation of pregnancy. 62 labours occurred in the various months of pregnancy in the following proportion.—Seven months, 9; eight months, 19; nine months, 17; and term, 17: the percentage mortality of mothers and infants being:—seven months—mothers 0 per cent., infants 100 per cent.; eight months—mothers 10 per cent., infants 68 per cent.; nine months—mothers 6 per cent., infants 47 per cent.; and term—mothers 18 per cent., infants 41 per cent.; showing that a prolongation of pregnancy to the last month more than doubles the danger to the mother while the infant mortality is reduced by one-third, a sufficient reason for inducing labour as soon as a diagnosis is made.

The extent to which the placenta encroaches on the lower uterine segment is likewise of moment in the prognosis; of 85 cases the placental insertion and maternal deaths were as follows: Central 15, mothers died 4; partial 25, mothers died 1; marginal 35, mothers died 0; and lateral 9, mothers died 0. That is to say, the mortality in complete placenta prævia was over 25 per cent., in partial cases, 4 per cent., and in lateral and marginal, 0.

A third and very important factor in prognosis is the condition of the patient when treatment is commenced with regard to (1) anaemia and collapse, and (2) stage to which labour is advanced, the former depending largely on the latter, as is clear from the following considerations. In 45 cases the os uteri would admit three fingers or less; only two of these died, in one of which the os was dilated manually for two hours. In six cases the os was from half to fully dilated, of these two died; moreover, in the two remaining cases which died and in which the size of the os is not stated it is related that a leg was brought down, from which it is probable that some considerable dilatation of the os was present. This shows the prime importance of early diagnosis and treatment, since it is manifest that those cases did worst which were farthest advanced in labour when treatment was undertaken, in consequence doubtless of the greater amount of flooding and collapse which occurred before help arrived.

TREATMENT AND RESULTS.

The cases are divided into four groups, according to the variety of treatment used. I begin at the end of the series, leaving for fuller consideration the cases in which the de Ribes bag was used.

Group D.—This series of 27 cases consists of those in which no treatment or only such minor steps as rupturing the membranes or giving ergot were taken. The cases were mostly of a mild nature, there being no case of complete placenta prævia in the set; two cases were certainly severe, the pulse-rate in one being 140. None of the mothers died. Only six infants, or 22 per cent., died. There were five cases of post-partum hæmorrhage, two of which were considerable. There are then a certain number of cases in which treatment, except of the slightest, is not necessary; such cases, however, need watching, for there is always a chance of flooding till labour is complete. To use no treatment, or such apologies for treatment as the injection of styptics as a routine, leads to disaster. King records in his series 33 such cases, of which 11—i.e., 33 per cent.—died.

Group C.—In six cases bipolar version was the treatment

take milk in small amounts. On June 1st she was taking ordinary diet. She left the hospital on June 2nd and has continued well since, showing no tendency to weakness of the various scars.

There are various points in these cases which are worth attention. 1. In both the ulcers gave no intimation of their presence until perforation occurred. 2. The symptoms were very much like those resulting from an obstruction by a band, there being well marked localised distension and peristalsis of the bowel near the perforation. 3. The distension of the bowel when exposed was found to be very great, but it could be relieved by forcing the contained gas through the perforation, after which manipulation was easy. In the first case it was not so easy to find the perforation. 4. In neither case was it necessary to excise the ulcer which was of limited extent and without much thickening of the edges. 5. In both a counter opening was required for satisfactory cleansing of the pelvis, but both wounds were closed, without drainage in the second case. The proportion of recorded cases of simple ulcer of the jejunum to the cases of gastro-enterostomy appears to be much against the anterior method of operation, but this tells as an argument less forcibly than would appear because it is very probable that the anterior operation has been performed much more frequently than the posterior. The anterior operation, moreover, possesses advantages which are likely to make it the more favoured operation of the future. The danger of the formation of this kind of ulcer is so slight that it may be neglected in considering the question.

PERFORATIONS OF THE SMALL INTESTINE MET WITH DURING THE COURSE OF AN ATTACK OF TYPHOID FEVER.

This group differs from the others which we have been considering inasmuch as the "acute abdomen" develops during the course of an illness which may have already severely tried the strength and endurance of the patient. It has been calculated by Dr. Mackenzie¹ that 3.3 per cent. of all cases of typhoid fever die from this complication; and further, that 69.6 per cent. of them occur during the second, third, or fourth week of the illness. His lecture is so very interesting and instructive that you cannot do better than read it for yourselves. Peritonism, the result of a perforation of the ileum, is often not very marked, and unless some such series of rules as those suggested for the nurse by Professor W. Osler² in cases of typhoid fever be enforced the occurrence may be overlooked. As a rule these patients are under skilled observation, therefore there is a chance for them which is not afforded the majority of those in our other groups. They are watched from the beginning and every preparation is made for operation at the earliest moment. Then, again, the contents of the ileum in this disease are frequently scanty and the perforation may not admit of the escape of much fluid; at all events the sensitive peritoneum is not flooded at once with a highly irritating acid compound, the amount of which rapidly increases from minute to minute.

About this time last year (November, 1904) a man, aged 30 years, was under treatment for suppurative periostitis of the femur and when the pus was evacuated a bacteriological investigation showed the presence of many typhoid bacilli in it. When he left the hospital the wound had closed. The history of this patient was briefly as follows. At the request of Dr. Mackenzie operation was performed on July 11th, 1902, five and a half hours after the commencement of symptoms indicating perforation. There had been sudden pain in the umbilical and right iliac regions, soon followed by vomiting. There were before operation the following local signs: resistance and tenderness in the umbilical and right iliac regions with deficiency in movement of the lower abdomen. The liver dulness was normal. There was no evidence of free fluid. The pulse was 104 and the temperature was 101° F. The amount of shock was slight. Incision below the umbilicus showed a round, clean-edged perforation about a quarter of an inch in diameter. There were some yellowish feculent fluid around the perforation and a small amount of lymph. The patient made a satisfactory recovery from the effects of the perforation but returned later for pain in the thigh which subsided under appropriate treatment. He was able to return to his work as a coal-heaver in the following year and continued to do it until the attack of

periostitis to which I have alluded. I may mention here as a curious addition to this history that the wound reopened after he left the hospital and as recently as December, 1904, the pus contained typhoid bacilli on bacteriological examination.

A second patient was also under the care of Dr. Mackenzie and symptoms of perforation had been noted 12 hours before operation on Dec. 4th, 1901. He was a man, aged 22 years, and the complication developed during a relapse. At the time of operation there were pain, distension, shifting dullness, indicating fluid in the flanks, extreme tenderness in the right iliac fossa, and a complete absence of dullness in the liver region. The pulse was 94, the respirations were 26, and temperature was 102.4° F. This temperature fell rapidly to 97° after operation, but soon rose again. Incision below the umbilicus showed a similar condition to that in the previous case, yellowish fluid, a coil of ileum to which a tag of omentum was adherent, and when this was lifted up a sharply cut circular ulcer measuring about one-eighth of an inch across was seen below it. Suture of the ulcer and cleansing of the peritoneum sufficed to prevent further local mischief and the patient recovered.

I have mentioned the subject of typhoid ulceration, of which I was reminded by the readmission of the man whose case I have first recorded when some of the other patients with perforations of the digestive tract were in the ward, because I especially wish to draw attention to the character of these perforating ulcers. They were no different from those which I have mentioned as occurring in other parts of the digestive tract; the perforation was that of an ulcer far removed from the influence of the gastric juice but possessing appearances which were quite indistinguishable from them. We cannot call them "peptic" and I can but think that too much importance is attached to the effect of the gastric juice on the jejunal ulcers which very rarely follow the operation of gastro-enterostomy. These ulcerations are very different from the typical typhoid patch with its thinned base and the prognosis is, of course, very much better, for the wall of the bowel near to the perforation is quite firm and will hold a stitch. In fact, in the second case the edges were drawn together with a No. 1 silk suture to prevent further escape of contents before Lembert's sutures were inserted. The amount of the shock was not severe in either patient. The rate of the pulse in the first was increased in frequency from 68 to 84, 45 minutes after the time of the perforation and to 104 three hours after. In the second it was more constant at 95 from two hours to ten hours after the time of the perforation. Patients with typhoid fever often suffer from abdominal pain. This has been so severe that abdominal exploration has been performed a number of times without anything having been found to account for the pain. The principal symptoms to trust to are, locally, pain and tenderness with rigidity of muscles and a fixity of the lower abdomen during respiration. If the liver dulness is absent the sign is important. In one of these cases there was no change in this respect even at the end of five and three-quarter hours after perforation.

PLACENTA PRÆVIA: A SERIES OF 94 CASES.

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THE patients forming this series were all treated either in the London Hospital or in their own homes by the London Hospital Maternity Charity in the years 1894-1904. Ten of the cases were attended personally. Seeing that the patients have been under the care of some fifteen or twenty different resident accoucheurs they may be expected to show an average result of the treatment of placenta prævia by modern methods, particularly by the use of a de Ribes bag. I wish to thank Dr. A. H. N. Lewers and Dr. H. R. Andrews for leave to publish these cases.

In discussing placenta prævia the main interest centres in the treatment, which consists in the methods of dealing with one variety of acute hemorrhage, a subject which appeals

¹ THE LANCET, Sept. 26th, 1903, p. 253.

² Philadelphia Medical Journal, 1901, Jan. 19th. See also Mackenzie, loc. cit.

TABLE GIVING PARTICULARS OF 94 CASES OF PLACENTA PRÆVIA—(Continued).

GROUP A.—Cases Treated by Means of the Champetier de Ribes Bag—(Continued).

No. of case.	Age.	Previous pregnancies.	Months pregnant.	State of labour and of patient.	History.	Treatment.	Result.	
							Mother.	Child.
36	30	3	—	—	—	Bag; version.	Recovery; normal.	Alive.
37	30	9	—	—	Great ante-partum flooding.	Bag; forceps.	" "	Dead.
38	36	7	—	—	—	Bag; ergot.	" "	"
39	40	11	—	—	—	Bag; natural delivery.	" "	"
40	29	1	—	—	Ante-partum flooding.	Bag; version; post-partum flooding.	" "	"

GROUP B.—Cases Treated by Version or Manual Extraction in Breech Presentations.

41	27	4	8	Os uteri admits hand; pulse over 140; pale; collapsed.	Flooding 14 days.	Placenta separated; leg brought down.	Death in three weeks; septicæmia.	Alive.
42	27	—	7	—	—	Leg brought down.	Died suddenly.	Died.
43	44	17	6½	Os uteri one finger; pulse rapid; collapsed.	Flooding two days.	Manual extraction after bringing down leg.	Recovery; normal.	"
44	35	9	4½	Os uteri two fingers.	—	Fœtus extracted manually.	Recovery; sapræmia.	"
45	26	3	8	Os uteri crown piece; pulse 150; blanched.	Flooding during labour.	Internal version after failure of forceps.	Recovery; normal.	Alive.
46	39	12	9	—	A flooding at 5 months.	Leg brought down; bad post-partum flooding; atonic uterus.	Died in 4 hours.	Died.
47	28	1	6	Os uteri three fingers; pulse 120; blanched.	Flooding 1 day badly.	Leg brought down.	Recovery; septicæmia.	"
48	30	5	9	Os fully dilated.	Flooding 14 days.	Version.	Recovery; normal.	Alive.
49	26	1	8½	Os uteri two fingers; anæmic.	Flooding 4 months.	Internal version.	" "	Died.
50	26	—	—	—	Ante-partum hæmorrhage.	Version.	" "	"
51	24	—	—	Os three-quarters dilated.	Lossing 14 days.	"	" "	Alive.
52	32	8	—	Good condition.	Hæmorrhage few days.	"	" "	"
53	28	1	—	Kyphotic pelvis.	—	"	" "	Died.
54	34	9	—	—	—	Leg brought down.	" "	"
55	27	3	9	—	—	Version.	" "	Alive.
56	33	4	9	Os uteri two fingers.	Ante-partum flooding.	Os dilated manually; version. Post-partum flooding; atonic uterus.	Death, shortly.	Died.
57	42	12	—	—	Great ante-partum flooding.	Version.	Recovery; normal.	Alive.
58	18	1	8	—	—	Os dilated; version.	" "	Died.
59	24	2	—	—	—	Version.	" "	Alive.
60	36	5	—	—	—	"	" "	Died.
76	35	—	7	Os fully dilated; pulse 144; collapsed.	Flooding 3 days; twins.	Twins; version.	Died in 13 hours.	2 died.

GROUP C.—Cases Treated by Bipolar Version.

61	39	5	6	Os uteri three fingers; pulse 120; pale.	Flooding a few hours.	Bipolar version; ergot; later, post-partum flooding.	Recovery; normal.	Died.
62	34	7	7	Os uteri two fingers; pulse 105; pale.	Flooding 3 days.	Bipolar version; ergot.	" "	"
63	25	3	6	Os uteri one finger; good condition.	" "	" " "	" "	"
64	44	13	7	Os uteri one finger; rapid pulse.	Lossing 3 months.	Bipolar version; ergot; post-partum hæmorrhage.	Recovery after hysterectomy 7 weeks later for continued flooding.	Alive.
65	29	2	9	Os uteri two fingers.	Lossing 5 weeks.	Bipolar version.	Recovery; normal.	Died.
66	—	9	—	—	Flooding weeks before admission; temperature 101° F.	Bipolar version; rigor next day and diarrhœa; death in 2 days.	Death; septicæmia.	(?)

GROUP D.—Cases not Treated or in which only Minor Treatment was used.

67	21	1	5	Os uteri two fingers; pulse 90; good condition.	Bleeding 12 hours.	Nil; spontaneous delivery.	Recovery; normal.	Dead.
68	24	0	9	Os uteri half dilated; pulse 100; fair condition.	Flooding 24 hours; hydramnios.	Membranes ruptured; forceps.	" "	Alive.
69	37	8	8	Os uteri crown piece; pulse 140; anæmic.	Flooding 6 weeks.	Membranes ruptured.	" "	"
70	29	9	5½	—	Irregular losing.	Ergot; membranes ruptured.	" "	Dead.
71	25	2	8	Os uteri one finger.	Flooding 6 weeks.	"	Recovery and bronchitis.	Alive.

TABLE GIVING PARTICULARS OF 94 CASES OF PLACENTA PRÆVIA.
GROUP A.—Cases Treated by Means of the Champetier de Ribes Bag.

No. of case.	Age.	Previous pregnancies.	Months pregnant.	State of labour and of patient.	History.	Treatment.	Result.	
							Mother.	Child.
1	21	0	7	Os uteri three fingers; pulse 120; pale.	Two or three floodings last 14 days.	Bag inserted alongside placenta; version.	Recovery; normal.	Alive; died in 8 hours.
2	30	4	6	Os uteri half a finger; pulse 120; pale.	Intermittent flooding 2 months.	Ergot 5 days; Hegar's dilators; bag; manual extraction.	Recovery; slight pyrexia.	Alive; died in 24 hours.
3	21	0	9	Os uteri three fingers; pulse 90; good condition.	A flooding 14 days before.	Bag inserted alongside placenta; version.	Recovery; normal.	Alive; died well.
4	36	0	7½	Os uteri one finger; kyphoscoliotic pelvis; good condition.	Flooding a few hours; hydramnios.	Bag; forceps.	" "	Died.
5	40	12	9	Os uteri three fingers; good condition.	Membranes ruptured 48 hours before; cord down.	Bipolar version failed; bag; child transverse; decapitated.	" "	"
6	33	9	9	Os uteri one finger; good condition; pulse 88.	Bleeding on day that labour began.	Bag inserted through membranes; ergot; forceps.	" "	"
7	41	7	9	Os uteri one finger; good condition.	Flooding 10 and 4 days before.	Bag; ergot; cord prolapsed; version.	" "	Alive.
8	33	5	8	Os uteri one finger; pulse 120-140; anæmic.	Flooding 1 day.	Bag inserted alongside placenta; version.	" "	Died.
9	36	6	8	Os uteri two fingers; pulse 80; very anæmic.	Flooding 2 months; great flooding recently.	Bag; natural delivery.	" "	Alive.
10	34	8	7	Os uteri two fingers; pulse 90.	Flooding 14 and 2 days before.	Bag inserted through placenta; ergot; delivery.	" "	Died.
11	26	*	9	—	—	Bag.	Recovery with slight aspræmia.	Alive.
12	20	0	8	Os uteri one finger.	Flooding 14 days before.	Bag; cord prolapsed; ergot.	Recovery; albuminuria.	"
13	35	6	9	Anæmic.	Flooding 3 days.	Bag; prolapse of cord; version.	Recovery; normal.	Died.
14	21	2	7½	Os uteri two fingers; pulse 85.	Flooding a week before.	Bag; ergot.	" "	Alive.
15	32	5	7	Os uteri undilated.	Labour induced for small round pelvis.	Bag; external version.	Recovery.	Alive; died.
16	42	7	8	Os uteri two fingers.	Losing 5 weeks.	Bag inserted in front of placenta; prolapse of cord; forceps.	Recovery; normal.	Alive.
17	30	3	7½	—	Flooding 14 days.	Bag and weight extension; version.	" "	"
18	29	3	9	Pulse 144.	Labour induced for small pelvis.	Bag; internal version.	" "	"
19	34	0	6	Os uteri one finger; pulse 120.	Flooding 8 days.	Bag; ergot.	Recovery; with aspræmia.	Died.
20	35	11	7	Os uteri three fingers.	Bleeding 1 day. Last three labours were placenta prævia.	Bag; transverse; dead; decapitation.	Recovery; normal.	Dead.
21	29	3	8	Good condition.	Losing 3 days.	Bag; version.	Recovery with melancholia.	Alive.
22	37	7	8½	Os uteri two fingers; pulse 140; anæmic.	Bleeding 23, 14, and 3 days before.	Bag; version.	Recovery with slight sepsis.	Dead.
23	37	10	8	Os uteri two fingers; pulse 103.	Bleeding at intervals 1 month.	Bag; ergot; version.	Recovery after 6 weeks; parametritis, &c.	"
24	42	11	9	Os uteri two fingers; blanched.	Flooding 3 months, 1 month, and 3 days before.	Bag through placenta; version; post-partum hæmorrhage.	Recovery; pyrexia 14 days.	Alive.
25	32	2	—	Os uteri two fingers; anæmic.	Hæmorrhage some months.	Bag; external version.	Recovery; slight aspræmia.	Dead.
26	23	0	9	Os uteri one finger; blanched.	Flooding 6 days.	Bag; ergot; forceps.	Recovery; normal.	"
27	33	12	7	Os uteri one finger; anæmic.	Hæmorrhage 2 days.	Bag; natural delivery.	" "	"
28	34	0	9	Os uteri two fingers.	Hæmorrhage 4 days.	Bag; forceps.	Recovery and pyrexia 1 week.	Alive.
29	37	6	9	—	Losing 3 months.	Bag; natural delivery.	Recovery; normal.	Dead.
30	37	—	—	Pulse 120.	Twins; first born naturally.	Bag after first child; version.	Recovery and pyrexia 1 week.	Two dead.
31	—	9	7½	—	Hæmorrhage 2 days.	Bag; version.	Recovery after pneumonia.	Dead.
32	28	5	8	Os uteri three fingers.	Three floodings in last week.	Bag; natural delivery.	Recovery and pyrexia 5 days.	"
33	33	6	8	Os uteri one finger; pulse 120; pale.	Flooding 1 month.	Bag; ergot; manual extraction.	Recovery; normal.	"
34	33	8	7	—	Hæmorrhage 1 month.	Bag through placenta.	"	"
35	22	0	9	Os uteri admits one finger.	Labour began without flooding.	Bag; forceps; post-partum flooding.	Recovery and slight pyrexia.	Alive.

* Several, number not known.

extremity may prolapse. Prolapse of the cord would appear to be more common after the use of the bag than in ordinary cases of placenta prævia: it occurred four times in the 40 cases in which the bag was used but only three times out of the 54 other cases. In two cases a vertex was changed into a transverse presentation. The hand in one case prolapsed and of two other cases a breech was changed to a vertex and vice versa. Such a change of position of the fœtus or prolapse of cord or extremity is of little practical moment, since internal version can be performed as soon as the bag is expelled and is usually the easiest and safest method of delivery, especially if flooding recurs after the bag is delivered. The treatment after delivery of the bag was: 16 cases, internal version; seven cases, forceps; two cases, decapitation; two cases, external version; and ten cases, natural delivery.

As to inserting the bag, the question arises whether it should be pushed through the placenta or up alongside the placenta between the latter and the uterus or through a hole in the membranes. In a case of complete placenta prævia it may be impossible to separate the placenta far enough up to reach the membranes, and, again, in the absence of pain, rendering the *ovum tense*, it may be difficult to penetrate the placenta in order to insert the bag through it. It is noted that in three cases the bag was passed through the placenta, in six cases through the membranes, and in eight cases between the placenta and uterus; the results were equally good with each method, hæmorrhage being controlled. It might be thought that inserting the bag without rupturing the membranes or perforating the placenta and thus draining off the waters would raise the intra-uterine tension to such an extent as to risk a rupture of the uterus. This did not occur, nor could I find any such case recorded; moreover, it is very easy whilst filling up the bag to feel the latter as it swells with a hand on the abdomen, and so judge of the tension of the uterus and bag. It has been supposed that the pressure of the bag on the placenta by diminishing the supply of oxygen to the fœtus would increase the fetal mortality. The mortality of this group is about 62 per cent., which is about the same as Charpentier gives for over 2000 cases; it is higher than the general fetal mortality for the whole collection and does not show one of the minor advantages of the bag—namely, a reduction in the fetal mortality, as I will show later to be the case in a larger collection from various writers.

The advantages from the use of the *de Ribes* bag are: 1. Ease of introduction; it is certainly easier to introduce a bag than to perform bipolar version, the only other general method useful in severe cases. 2. Efficient means of treatment can be used at an earlier stage of labour than by any other method; dilatation of the cervix is seldom needed; in only one of these 40 cases was this necessary. A bag can be inserted through an os that admits little more than one finger; while for bipolar version the os should admit two fingers comfortably. 3. Arrest of hæmorrhage is certain; gentle traction on the stalk of the bag will suffice to check any bleeding, or slight weight extension from two to four pounds may be used if the bag has to remain in a long time and pains do not come on. 4. Uterine contraction is stimulated. 5. Little discomfort is caused and there is no risk of sloughing such as may occur from the use of a tampon in the vagina.

Results obtained by various methods of treatment.—I have collected from various authors 249 cases of placenta prævia treated by means of the *de Ribes* bag which show the following results: 249 mothers, 8 died, i.e., 3.2 per cent.; 222 infants, 68 died, i.e., 31 per cent.—the best result of any large number of cases both for mothers and infants. The results of various authors by bipolar version are: 420 mothers, 28 deaths, i.e., 6.7 per cent.; 256 infants, 61 per cent. Separation of the placenta from the lower zone of the uterus has given good results: thus Murphy had a series of 29, of which no mothers died. This method, although physiological, cannot be relied on for general application, since in the absence of pains there is no reason why separating the placenta should stop hæmorrhage; on the contrary, there is a great danger of the hæmorrhage being made worse. Separation of the placenta is generally done whilst performing bipolar version or inserting a bag and in combination with a trustworthy method of controlling hæmorrhage is useful.

Of results obtained by a tampon in the vagina Auvard gives the following figures: 253 cases, 73 mothers and 100 infants died. As many of these date from pre-antiseptic

days it is perhaps hardly fair to compare them with modern results. But supposing half of the deaths to have been from septic complications—a very liberal estimate—the deaths from hæmorrhage would still amount to 15 per cent. Moreover, Auvard, an advocate of the tampon, found that hæmorrhage was not controlled in one-third of the cases; also extreme pain, to say nothing of sloughing, had been brought about by this method.

Of recent years Cæsarean section has been proposed as the treatment of placenta prævia. Tait published a successful case in 1899 and later Conroy and Donoghue have each saved a patient. But in spite of these brilliant results, reckoning no less to the skill of the surgeons than to the stamina of the patients, the mortality with this treatment is very high. Out of ten cases which are reported five died; *accouchement forcé* was not more deadly. Certainly the death-rate for Cæsarean section has been reduced in selected cases to near zero. But a patient who has just had a big flooding will seldom be an inviting subject for Cæsarean section. The matter is well summed up by Palmer, who advocates Cæsarean section only in cases where the os is undilated (I would rather say undilatable) or hæmorrhage is uncontrollable, the child is alive and at term, the temperature of the patient is normal, the patient is not greatly reduced by loss of blood, and the environment is suitable: a combination of events likely to prove extremely rare. There are two obvious fallacies in the arguments of those who advocate Cæsarean section as an "ideal treatment" for placenta prævia. First they imagine the mortality of placenta prævia to be far higher than it is; thus the figures given by Simpson are 29 per cent. Tait magnified this to 40 per cent. and believed that it was really 50 per cent., whereas under suitable treatment it is under 10 per cent. In the second place they think that the first end in view is the rapid emptying of the uterus; this should, however, only be the final objective, the immediate aim being to control hæmorrhage by pressure on the bleeding points.

CONCLUSIONS.

The line of treatment to be pursued in these cases is that which surely arrests hæmorrhage at the earliest possible moment; the only certain means of doing this is by pressure on the bleeding points. The progress and completion of labour, though they may assist in stopping hæmorrhage and ultimately do stop it, are secondary matters. Primary treatment is not directly concerned in hurrying on labour except in the slighter cases, although the methods employed do so incidentally. In a fair number of lateral and marginal, very rarely in central, implantation, the flooding may be quite trifling and no treatment will be needed beyond the slightest. It must, however, always be borne in mind that a placenta implanted on the lower segment, though not causing flooding, may quite suddenly and unexpectedly do so, especially if the placenta becomes partially separated and labour pains cease. Kirg, indeed, found that the apparently slight cases had a greater mortality than those more severe, presumably because in these cases the medical attendants were less on their guard. It is therefore important, even in apparently trivial cases, to watch carefully, or, if from lack of time this should be impossible, to take measures so that flooding cannot occur. Early diagnosis is essential for efficient treatment. A certain number of cases are only seen when the patient is so drained of blood that recovery is wellnigh impossible.

It is necessary, therefore, in cases of ante partum hæmorrhage, in which the os will not admit a finger, to ascertain, by bimanual and abdominal examination whether or not the placenta be implanted on the lower segment, since these cases can almost certainly be saved if treatment be undertaken early. Labour, if not in progress, should be induced immediately, since completion of labour is the ultimate cure. Should the os not admit a bag or performing bipolar version it must be dilated till one of these modes of treatment can be adopted. Such a preliminary *manœuvre* is seldom necessary. In the only case of this nature, No. 2, after dilating to 22 Hegar, the bag could be inserted. Sponge tents have been used with success by Jungbluth and are well spoken of by Barnes and Spiegelberg. Palmer advocates plugging the cervix with gauze for this purpose. Manual dilatation has its advocates. Case 56 shows this method may end in disaster. When the os is of suitable size a bag is inserted or bipolar version is performed, the choice lying with the bag, if one be to be used, since it can be introduced through a smaller cervix and the technique is somewhat easier. Immediate

TABLE GIVING PARTICULARS OF 94 CASES OF PLACENTA PRÆVIA—(Continued).
GROUP D.—Cases not Treated or in which only Minor Treatment was used—(Continued).

No. of case.	Age.	Previous pregnancies.	Months pregnant.	State of labour and of patient.	History.	Treatment.	Result.	
							Mother.	Child.
72	32	4	7	Os uteri one finger.	—	Ergot; membranes ruptured; forceps.	Recovery; normal.	Dead
73	22	0	7	Os uteri less than one finger.	Flooding a few hours.	Ergot; membranes ruptured	Recovery and pyrexia.	Alive
74	29	8	8	Os uteri two fingers.	Flooding 10 days.	Ergot; fetus born in membranes.	Recovery; normal.	Dead
75	29	3	7	Os uteri two fingers.	Flooding 3 days.	Natural delivery.	" "	Alive
77	30	3	—	—	Prolapsed cord.	Placenta, cord and face born together.	" "	Dead
78	44	9	—	—	—	Nil; some post-partum flooding.	" "	Alive
79	—	4	—	—	Ante-partum flooding.	Ergot.	" "	"
80	33	4	—	—	—	—	" "	"
81	23	1	—	—	—	—	" "	"
82	42	10	—	—	—	—	" "	"
83	35	6	—	—	—	Nil; some post-partum flooding.	" "	"
84	30	8	—	—	—	—	" "	"
85	24	3	—	—	—	—	" "	Dead
86	29	8	—	Placenta, cord, and foot presenting.	Flooding 24 hours	—	" "	Alive.
87	39	10	—	—	Lost 2 pints.	—	" "	"
88	24	2	—	—	Flooding 2 days.	—	" "	"
89	24	—	—	—	Slight flooding.	—	" "	"
90	34	4	—	—	—	—	" "	"
91	37	6	—	—	—	Slight post partum flooding.	" "	"
92	23	2	—	—	—	—	" "	"
93	27	2	—	—	—	Considerable post-partum flooding.	" "	"
94	35	4	—	—	—	—	" "	"

adopted. In two cases the placenta was central. The condition of three cases was grave. The flooding was checked by the treatment. There were two cases of post-partum hæmorrhage—one, an alcoholic, was pulled out of bed by her inebriated friends shortly after delivery; the other was a curious case of recurrent severe metrorrhagia persisting for seven weeks and only cured by hysterectomy, no cause for the bleeding being found. One case died the day after delivery, apparently from septicæmia contracted before treatment was undertaken, so this death can hardly be set down to any failure in the method used.

Group B.—21 cases were treated by internal version or manual delivery in the case of pelvic presentations. Of the 21 mothers five died, and of the 22 children 14 died. This series shows a mortality almost equal to the worst results of 100 years ago; there are several factors to account for this. In five cases the placenta was inserted centrally. Nine of the patients were in a very precarious condition when first seen. In five cases the os was considerably dilated and seen. In five cases the os was flooding for some time. This probably the patients had been flooding for some time. This group, then, contains an exceptional number of severe cases. Four cases died soon after delivery, in from four to 13 hours. Two of them as the result of collapse from the ante-partum hæmorrhage—one of which was a twin labour moribund from the first. The other two succumbed to post-partum hæmorrhage with atony of the uterus. Two cases suffered from septicæmia and one from sapræmia; one of the former died at the end of three weeks—this case had been with some difficulty saved from succumbing to ante-partum hæmorrhage. In this group there were six pelvic presentations, of which three mothers and four infants died; 14 cases of internal version, of which one mother and seven infants died; and one case of version in twins, of which the mother and both infants died. The mortality of version is not so high, then, as appeared at first glance and gives fair results in suitable cases. The cases, however, in which version is indicated are frequently severe, since considerable dilatation of the os must be present to make internal version a fair proceeding,

and the mortality will naturally be higher than that for labour with methods which can be used at an earlier stage.

Group A.—40 cases were treated by the insertion of the de Ribes bag. None of the mothers died. 25 of the infants died. In eight cases the placenta was central. Ten cases were severe. In none of the cases did the os uteri dilate more than three fingers, or, in other words, treatment was used at a comparatively early stage in all these cases. It will be noted that the proportion of central placenta prevails the same in this as in Group C, but the proportion of severe cases is considerably less in the present series. It seems reasonable to suppose that the early adoption of treatment which controlled the hæmorrhage kept down the number of severe cases. The bag once introduced never failed to control the flooding and to induce labour, though the latter was at times a lengthy matter. In the 32 cases in which time is given the bag was expelled as follows: in from 5 minutes to 5 hours, 14 cases; in from 6 to 12 hours, 8 cases; in from 12 to 24 hours, 5 cases; and in from 24 to 36 hours, 5 cases. It has been objected that the prolonged sojourn of this instrument in the uterus makes for sepsis. There is some truth in this: of the 40 cases, 4 had a slight rise of temperature on the third to the fifth day, 7 suffered from slight sepsis or sapræmia, 1 developed bronchitis, pleurisy and parametritis lasting six weeks, and 1 had pneumonia. That is to say, only two cases had any septic trouble beyond the slightest and no case died. It does seem, however, that a slight degree of sepsis or sapræmia was rather more common after the use of the bag than in the other cases. Another objection made is that filling up the bag to separate the placenta more and so increase the hæmorrhage. This cannot occur if the bag be inserted through a hole in the placenta or membranes and does not occur if the bag is pushed between the placenta and uterus, since any bleeding point exposed by stripping the placenta is at once pressed by the expanding bag and the hæmorrhage is thus controlled. The bag may displace the presenting part, and the cord or

attacks nervous and muscular tissues. In the acute stage of diphtheritic toxæmia acute degenerative changes occur in certain cells of the central nervous system and amongst these cells the nucleus of the vagus is affected and extensive fatty degeneration occurs in the muscular fibres of the heart. It is thus that acute diphtheritic poisoning proves fatal, the patient dying from a primary progressive failure of the heart as the result of acute degenerative changes in the neuromuscular mechanism of that organ. At a later stage of the disease, if the patient survives, the poison attacks the peripheral nerves and voluntary muscles; a primary parenchymatous degeneration occurs in the nerve and fatty degeneration in the muscle. The vagus nerve may be attacked along with other nerves and an infiltration of round cells may occur in the intermuscular substance of the heart. The conditions which we have to treat are therefore of a degenerative nature and they are, moreover, *acutely* produced, which renders them considerably more fatal than chronic changes of a similar nature. It must also be remembered that not only is the muscular power of the heart affected but that its regulative mechanism is also interfered with. A fact of the greatest importance in treatment is that the degenerative changes in the heart found in the acute stage of the disease, if a fatal dose of poison has been absorbed, are of themselves capable of bringing about a primary failure of the heart and death, but that the changes found in the later stages of the disease do not lead to death except through the interposition of some strain which the heart is unprepared to meet. The majority of patients, if they survive the acute stage, show some signs of heart failure either in the direction of irregular action or dilatation of that organ. Pathological investigation has further led to the discovery of a specific antitoxin to the diphtheritic poison and thus the treatment of heart failure in diphtheria would seem to be reduced to the simple measure of giving a sufficient dose of antitoxin; but although this is indeed the fundamental principle to be adopted yet it will be seen by a study of the various circumstances in which heart failure occurs that certain auxiliary measures may be adopted, and are indeed necessary, since it is comparatively rare that a sufficient dose of antitoxin has been given before degenerative changes have already occurred in the heart.

I shall first direct your attention to two most important points in the administration of antitoxin. The first point is that it is absolutely necessary to administer antitoxin at the earliest possible moment, since this is a means not of treating heart failure but of preventing the occurrence of changes which lead to it, and that the earlier antitoxin is given the less chance is there of heart failure subsequently supervening. The administration of antitoxin leads directly to the neutralisation of the toxin. If a fatal dose of diphtheria toxin is mixed in the test tube with sufficient antitoxin to neutralise it and the mixture is then injected into an animal no symptoms result. If less than this amount of antitoxin is used the resulting symptoms are proportional to the amount of toxin unneutralised; in such a case no acute symptoms may supervene but the animal may become subsequently paralysed. The same result is seen even if an additional amount of antitoxin is immediately injected. If the toxin is injected intravenously and if after a few minutes the antitoxin is injected the animal will die unless a very large dose of antitoxin is used. If a longer interval is allowed to elapse the animal cannot be saved. The toxin becomes very rapidly combined with the particular tissue affected by it and is then only neutralised with great difficulty by the antitoxin; after it has produced its effects on the tissues it cannot be neutralised. In human diphtheria the toxin is not suddenly poured into the blood as in an experiment but is formed slowly and therefore it is possible to neutralise it by large doses of antitoxin; it should, however, be borne in mind that extensive fatty degeneration of the heart may be found in three days. From experiment we therefore learn that if antitoxin is to be of any service it must be given at the earliest possible moment. Clinical observation also bears out this point. The statistics of the Chicago health department show that of cases first treated by antitoxin on the first day of the disease the mortality is 0.42 per cent., of those first treated on the second day 1.54 per cent., on the third day 3.59 per cent., on the fourth day 11.38 per cent., and later than the fourth day over 23 per cent. Other statistics are in entire agreement with these, only varying a little in the figures. These statistics include cases dying from laryngeal obstruction and also complications, but the vast

majority died from heart failure and therefore the immense importance of the early administration of antitoxin in preventing this is strikingly manifest. In making a prognosis also in a case of diphtheria, one of the first points to be considered is the day on which antitoxin was first administered. I say first administered, because a subsequent dose is undoubtedly useful in some cases in which the membrane has shown no signs of separating or goes on increasing in extent. It should be an invariable rule that immediately diphtheria is suspected in a patient and without waiting for a bacteriological examination, antitoxin should be at once administered as soon as it can be procured. This should be done however slight the case appears to be, because although the severity of the local lesion is, speaking generally, a measure of the severity of the systemic poisoning, an apparently mild case may be followed by marked symptoms. We have no idea of the individual susceptibility of the patient to the disease, neither have we any idea of the number and virulence of the bacilli present.

The second point with regard to the administration of antitoxin to which I wish to refer is that it should be given in large doses. I have already mentioned that if antitoxin is given subsequently to toxin experimentally a much larger dose is needed to prevent acute symptoms and death than if the two are mixed together before injection; and moreover, Ehrlich has demonstrated by partial neutralisation of toxin by antitoxin that the latter is much more efficient in averting death in the acute stage than in preventing the subsequent paralysis. Here again clinical observation is in entire agreement with experiment on these two points and it is found that the mortality is lower when large doses of antitoxin are used and also that to modify the subsequent paralysis large doses are necessary. Fixing the dose of antitoxin is difficult but most authorities agree that 4000 to 6000 units should be the minimum dose for an ordinary case. In the severe cases when larger doses are necessary the question arises whether 4000 units should be given at once and repeated at short intervals until, say, 12,000 or 24,000 units or even more have been injected, or whether the larger dose should be given at once. Personally I cannot see the advantage of small and repeated doses over a massive dose. I think that in a severe case of diphtheria 12,000 to 24,000 units should be given at once and if on the next day there is no improvement in the nasal discharge or separation of the membrane, or if the membrane has extended, the injection should be repeated. In the worst cases some clinicians inject up to 30,000 units at once and repeat the injection in 24 or 48 hours. There is no danger in the antitoxin and the complications that are liable to ensue such as rashes, joint pains, and so forth, are not much more likely to follow large injections than smaller ones. Besides the severity of the case as a guide to the dosage of antitoxin, the time at which it comes under treatment is of importance, a larger dose being necessary on the third or fourth day than is necessary on the first or second day. Time may be also saved if the case is seen late by injecting the antitoxin intravenously. In all other cases subcutaneous injection should be employed, as antitoxin is practically not absorbed at all by the stomach or rectum. The dose is the same for children as for adults.

The point next in importance to the early administration of antitoxin is *rest* both physical and mental. By the term "rest" I mean the avoidance of all causes likely to throw any strain upon the degenerate heart. In the treatment of heart failure due to any cause whatever rest is an important factor because in these circumstances the heart has a diminished amount of work presented to it, but in the treatment of heart failure in diphtheria apart from the administration of antitoxin rest is the important factor and in the majority of cases it is the only one of any use whatever. In the acute stage of the disease when the heart is failing sudden death may occur at any time as the result of the strain of vomiting or jumping up suddenly in bed. If the acute stage is survived and the patient left with signs of heart failure due to changes not in themselves sufficient to kill him strain may again determine sudden death. On the other hand, if he have no signs whatever of heart failure the strain of getting up too early in the progress of the disease often initiates it, thus bringing into evidence the latent heart weakness. Causes leading to heart failure in the later stages of the disease are mental excitement or shock, sudden exertion, vomiting, and respiratory paralysis. The point which I wish to emphasise here is that in the vast majority of cases after the first three weeks of the disease have

treatment is now complete since slight traction on the stalk of the bag or on the leg of the foetus effectively stays further hæmorrhage by causing an inverted cone to press on the lower uterine segment; delivery can now be awaited with equanimity, the strength of the patient being supported as much as is necessary. It matters little whether the bag be pushed through the placenta or membranes or between the uterus and placenta. Ergot was given in several cases with no bad result. In a case with a very rigid cervix ergot might possibly do harm in the first stage of labour by tiring out the uterus in overcoming the resistant cervix and so lead to atony and post-partum hæmorrhage later; for this reason ergot was not given early in Case 2. Moreover, tension on the stalk of the bag is enough to put a stop to flooding. After the bag is delivered, unless the head or breech is driven down by strong pains, internal version is the best course, since flooding occurred in several cases after the bag was expelled. In these cases the insertion of the arm for version acts as a plug till the foetus is turned and can in its turn act as a plug. The alternative of applying the forceps may be rendered difficult by the distance the head is up and by the placenta baulking the operator. Although nothing untoward happened in the seven cases thus dealt with in this collection yet the forceps is of bad repute in the treatment of placenta prævia, for King mentions ten cases with a mortality of 30 per cent. and Auvar 21 cases in which the forceps was used at the "moment of election" with a mortality of 45 per cent.

If the os be considerably dilated when the case is first seen internal version or bringing down a leg in pelvic presentations seems to be the indication; inserting a bag would only increase the amount of manipulation without corresponding advantage. As has been already pointed out, the high mortality of cases suitable for this plan of treatment is due to the fact that so many of them are in a very dangerous condition when first seen. Having met the first indication—namely, checking the hæmorrhage—the next point is to keep up the patient's strength. In severe cases the quickest method is by auto-transfusion, or, in other words, raising the foot of the bed on chairs. Next in rapidity of action is intravenous infusion of saline solution. The latter, though a simple proceeding in a hospital or decent house, where some assistance and clean water can be obtained, may yet in the hovels of the poor prove a very different matter; the water may be so full of extraneous matter as to block completely fine tubes and cannulae. It is here that normal saline solution given per rectum is of the greatest service; it is rapidly absorbed and can be quickly given with a Higginson's syringe. The rectum of freshly delivered women is surprisingly enduring of liquid refreshment. From four to six pints can be given in this way in from one to two hours without any discomfort or return. The weak point about this method is that it cannot be used till labour is complete, whereas intravenous or subcutaneous infusion can be used as soon as hæmorrhage is controlled. With regard to the third stage of labour, it is well to remember the comparative frequency of adherence of a placenta prævia, and consequently there is reason to remove the placenta manually more often than in normal cases.

CASE A.

Recorded for the difficulty in diagnosis; probable rupture of varicose veins of the vagina; gross hæmorrhage; plugging; recovery.—An English multipara with a badly ruptured perineum and slightly contracted pelvis was advised to have labour induced at eight and a half months. There were very large varicose veins of the legs extending on to the vulva and up the vagina. The patient was on an inclinable table and I had just got so far as to begin inserting a bougie for the purpose of inducing labour when the patient strained for two or three times. In a moment there came a gush of hæmorrhage as if a large jug had been upset. Swabbing away blood to look for a bleeding point was out of the question. A clenched fist thrust into the vagina and raising the pelvis also failed. Owing to the ruptured perineum blood poured out all round. The patient was already blanched and nearly pulseless. I hurriedly rolled a sterilised towel into a ball and pushed it up the vagina, the flooding ceased, though how much from the plug and how much from loss of blood is difficult to say. Not having much confidence in the plugging and thinking it possible that passing the bougie might have detached a portion of a low-lying placenta I thought it advisable to make pressure on any bleeding point which there might be from the

upper end of the lower uterine segment down to the vulva. I therefore, having removed the towel quickly, inserted a de Ribes bag, the os being sufficiently patulous. Having filled the bag with water, I then stuffed the vagina with gauze, at the same time pulling down the bag and so exerting firm pressure on the whole lower part of the uterus and vagina. There was no further sign of hæmorrhage. Although the whole episode had not taken more than ten minutes the patient seemed to be on the point of dying from acute anæmia. Five pints of intravenous saline infusion, however, made her rally and in 12 hours she was delivered of bag, plug, and dead child without further bleeding. She made a symptomless recovery. The exact source of bleeding remained undiscovered.

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Ramsgate.

SOME POINTS IN THE TREATMENT OF HEART FAILURE IN DIPHTHERIA.

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THE successful treatment of heart failure in diphtheria depends upon a knowledge of the various clinical forms of this condition, of the different periods during the disease when it may be expected to occur, and of the chief circumstances influencing its onset. These points are all quite easily grasped when the essential facts in the pathology of the disease are thoroughly understood. I will therefore, in the first place, take the opportunity of reminding you of these facts. In former times the treatment of diphtheria was directed solely against the local lesion but the recent study of the pathology of this disease has shown that its fatal character is dependent not upon the local lesion but upon the systemic intoxication which results from the absorption of certain poisons and that this poisoning cannot be prevented by any means directed against the local lesion. The latter is only of itself directly dangerous to life when it mechanically obstructs the larynx. The diphtheritic poison has a selective action and especially

¹ A paper read before the Windsor and District Medical Society on Dec. 20th, 1905.

is increased by the tendency of mucus to collect in the bronchial tubes and so prevent free entry of air and free expansion of the lung. Pneumonia may also be present as a complication. A strain is thus thrown upon the heart and at the same time it suffers from partial asphyxia owing to deficient oxygenation of the blood. It follows from this that a heart which was not sufficiently degenerated *primarily* to cause death may *secondarily* do so owing to the extra stress put upon it by respiratory paralysis. Unfortunately, very little can be done for this condition, but one point which should not be forgotten is to raise the foot of the bed so that gravity will assist in draining the lungs and at the same time in keeping the mouth free from saliva which collects when the pharyngeal muscles are paralysed and adds an extra danger by flowing into the larynx and causing asphyxial attacks. Vomiting in association with paralysis acts as a strain to the heart, as in the acute stage of the disease, and may lead to death from heart failure. The best treatment for this is to stop all food by the mouth and to feed per rectum or subcutaneously. Drugs are practically useless in this condition. In addition to paralysis coming on during the course of heart failure the latter may first appear just preceding the paralysis, especially when such paralysis has an early onset, or it may first appear during the course of paralysis. When paralysis comes on before the acute stage as ended it is naturally associated with an irregular pulse, as the latter is so common at this stage. When the heart failure first appears during paralysis, occurring at a late stage of the disease, it is the result of a latent weakness of the heart brought into evidence by the paralysis as shown above, or it is due to degeneration of the vagus occurring as a part of extensive nerve degeneration. Whether isolated degeneration of the vagus occurs has not yet been proved.

I come next to the question of the use of cardiac stimulants and tonics. Our knowledge of the exact mode of action of these drugs upon the vascular system is still imperfect, but it is sufficiently definite to guide us in the selection of particular drugs the pharmacological actions of which meet the requirements of different classes of cases of heart failure. At the outset I may remark that the utility of such drugs in treating heart failure in diphtheria is not very great and some of them are contra-indicated. The action of the majority of the heart poisons with which we are familiar is directed not only towards the heart itself but also towards the inhibitory apparatus of that organ and the toxin of diphtheria is no exception to this rule. Not only, as I mentioned above, is there to be found post mortem in patients dead from diphtheria extensive degeneration of the heart muscle, but also degeneration in certain nerve cells in the medulla. This degeneration is especially marked in the motor nucleus of the vagus about the region where Laborde located the vagus centre in the cat by the needle method of excitation. Clinically, we have evidence that the vagus centre is excited in the attacks of slowing with irregularity of the pulse which are so common in the earlier stages of diphtheria. A slow irregular pulse is one of the most fatal signs in the acute toxic stage of this disease. We have seen the dangers of presenting any extra work to the weakened heart and therefore all drugs which raise the blood pressure by excitation of the vaso-motor centre or by a direct action on the arterioles are contra-indicated and all drugs are likewise to be prohibited which act upon the inhibitory apparatus of the heart. This is precisely the action of the group of drugs of which digitalis is a member. In therapeutic doses digitalis slows the heart by stimulation of the inhibitory apparatus and the ventricles more completely empty themselves and contract to a smaller size by a direct action of the drug upon the cardiac muscle. With poisonous doses the inhibitory action may be more prominent, the rhythm of the heart being very slow and irregular and the ventricle dilating more completely in diastole; this inhibitory action may entirely conceal the muscular action. At a later stage, owing to increased irritability, the heart becomes rapid and passes into delirium. The blood pressure is raised by constriction of the arterioles by a direct action of the drug on the muscular walls of those vessels and probably also by its action upon the vaso-motor centre in the medulla. Whether digitalis invariably causes a rise in the blood pressure seems to be a doubtful point, because in the course of some clinical observations upon the blood pressure in cardiac dropsy I have found the height of the pressure to be unaffected by the administration of this drug, although the heart was slowed and the dropsy disappeared. Theoretically,

the employment of the digitalis group of drugs is thus contra-indicated in the early stages of diphtheria when the pulse is slow. Strychnine, which has been employed, is also contra-indicated at this stage because it acts upon the nervous system, slows the heart by vagus inhibition, and raises the blood pressure by vaso-motor constriction. Practically, I have never known a case to be saved by the use of these drugs and I know of no statistics proving that the mortality of the disease is lowered by their employment. This objection does not hold in the case of the cardiac stimulants which are considered to increase reflexly the force and frequency of the pulse and some of which cause vaso dilatation. Alcohol, ether, or camphor are examples of such drugs, but it is extremely doubtful if their employment is of any value whatever in the early stages of diphtheria. It is becoming more and more recognized that the action of alcohol on the heart is in the direction of lessened efficiency. If the patient has received a fatal dose of toxin, antitoxin if given early will save him by preventing cardiac degeneration, but no amount of cardiac stimulation will do any good whatever if antitoxin fails. Cardiac stimulants are therefore chiefly of use in the later stages of the disease when the weakened heart gives way before some strain, leading to a gradual failure or sudden syncope. A paralysed patient at a late stage of the disease who is cold and almost pulseless as the result of vomiting may be benefited by cardiac stimulation, but such a condition in the first fortnight of the disease leads inevitably to a fatal termination in my experience. I have found the application of heat and counter irritation to the precordium to be valuable adjuncts to the cardiac stimulation in the later stage of the disease.

In conclusion, I should like to mention a drug which has not yet received a fair trial in the treatment of heart failure in diphtheria. This drug is belladonna. Of course, it is a very difficult matter to test the efficacy of a drug in such a condition as that the treatment of which we are discussing. It could only be done by testing it upon several hundred patients in various doses, carefully noting the effects upon the circulation and comparing the results with those obtained in a similar number of patients at the same stage of the disease and treated without drugs. The action of small quantities of atropine is to paralyse the terminations of the vagus in the heart and therefore to do away with the inhibitory action of that nerve. The heart is accelerated, the systole increased in extent, the diastolic expansion somewhat diminished, and the output of the heart per minute increased. It could not be expected that the severest cases would be saved by this drug but there are many borderline cases which might be considerably benefited by it, especially those associated with a slow pulse.

Lastly, it should be remembered that the mere presence of irregularity of the pulse or of the physical signs of cardiac dilatation is no indication whatever for the use of cardiac stimulants and that strict rest in bed is the chief requisite for such cases.

Deronsire-street, W.

ON EUCALYPTUS OIL AS A VERNIFUGE IN ANKYLOSTOMIASIS.

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IN the summer of 1905 four male pygmies were admitted into Kasr-el-Aini Hospital under my care for treatment as they were found to be harbouring ankylostomata. They were somewhat anæmic and three of them had enlarged spleen. I proceeded to treat them in the usual way with thymol, though not quite in the full doses on account of their small size and the age of the smallest. The result of the thymol treatment was not good as only two male ankylostomata were expelled from the four. Dr. Looss, the helminthologist to the school, then drew my attention to a method of treatment described by Dr. Hermann of Mons, in Belgium, as employed by him in the treatment of ankylostomiasis in miners, in which eucalyptus oil acted, with the assistance of chloroform, as a vermifuge. I accordingly tried it upon them with the result that the first administration

passed death from heart failure will only occur as the result of some complication or strain and that therefore we have at hand a ready means of obviating this to a large extent.

From the foregoing remarks it would appear that rest is a more powerful therapeutic agent after the acute stage has passed than when it is present, because patients are naturally always kept in bed during this stage of the disease and heart failure leading to death at this time occurs independently of any external circumstances. And it is a fact that the key to the successful treatment of heart failure in diphtheria is antitoxin to prevent death in the acute stage and rest to prevent death in the later stage, after antitoxin has done what it is able to prevent cardiac degeneration. There are, however, borderland cases in which the presence or absence of strain in the acute stage may mean the death or recovery of the patient. Every case, therefore, however mild it may appear, is to be strictly confined to bed during the period of acute symptoms. A careful watch must be kept upon the heart and pulse and since the latter varies from hour to hour when heart failure has commenced it must be frequently examined during the day and if possible during the night, or else if only casually examined at the morning visit it might appear to be quite normal. In fatal cases the first signs of heart failure commence usually about the end of the first week, in some cases earlier than this, and death occurs with great regularity usually within the first 14 days. The signs to be observed are irregularity and weakness of the pulse, together with undue rapidity or slowing. A slow irregular pulse is of bad prognostic significance. The first sound of the heart is short and feeble, the pulmonary second sound accentuated, and the impulse may be diffuse and slapping. When these signs are present the patient should be kept lying with the head low and disturbed as little as possible. Great care should be exercised in syringing or making applications to the throat, as it is a common report from the nurse that the patient became "very collapsed" after syringing; in such a case as this very active treatment should be discontinued or there will be a danger of sudden syncope. Another danger lies in the strain produced by vomiting. Every medical officer who has had charge of diphtheria wards must have been an eye-witness to cases of sudden death resulting from vomiting. The first case I saw die suddenly was that of a little girl in the diphtheria ward of the old University College Hospital. She was suffering from heart failure during the acute stage and showed no symptoms whatever except a gradual failure of the heart that was progressively advancing. On the thirteenth day of the disease she asked for a little jelly which was given her by the ward sister whilst I was standing by; immediately after swallowing the nourishment she raised herself up to vomit and fell back in a faint; after three or four gasps at intervals she was dead. Great care must therefore be exercised in the giving of nourishment and medicines lest vomiting be excited; medicines as a rule are useless and should rarely be given in the acute stage of diphtheria. The early vomiting in diphtheria is usually independent of food and in my opinion the evidence is largely in favour of its being central in origin; it is extremely difficult to control and rectal feeding should be resorted to, drugs apparently having no beneficial effect on it whatever.

Dr. G. O. Garratt, late of the London Fever Hospital, is greatly in favour of washing out the stomach repeatedly. He claims success by this method combined with the administration of belladonna but it has not yet been sufficiently tried for an opinion to be definitely stated as to its value. I should think it would not be always a simple matter and might entail the risk of syncope, as many children would struggle considerably.

The next point which arises in relation to the question of rest is, How long should a case of diphtheria be kept in bed? We have seen that in fatal cases the heart symptoms commence about the end of the first week or even earlier, and that death usually occurs during the first 14 days of the disease and exceptionally a day or two later than this. In the case of patients who do not die directly from the toxæmia the majority show some signs of heart failure, but these commence rather later than in fatal cases. They commonly begin about the end of the second or during the third week of the disease, although in some cases they may appear at the end of the first week. In these cases when heart signs have supervened prolonged rest in bed is necessary. The general rule, which must be always adhered to, should be that, however mild the case appears to be, the patient should

be kept in bed for three weeks from the onset of the disease, and this is all the more necessary since the throat may have been clear of membrane for a day or two before the heart symptoms, which will lead to a fatal issue, appear. If at the end of three weeks no irregularity of the pulse or signs of dilatation of the heart have appeared the patient may be allowed to sit up for an hour or two on a couch during the day and each day the time of sitting up may be lengthened until the patient is at the end of a week able to walk. All this time the pulse and heart must be carefully watched, because often the effort of getting up is sufficient to bring into evidence a latent weakness of the heart which caused no signs so long as the patient was lying in bed. If any signs of heart failure are brought into evidence by the exertion of getting up the patient must immediately be put back to bed again and remain there until the signs have disappeared.

If the patient has survived the first 14 days and is left with an irregular pulse and probably with his cardiac impulse outside the nipple and a systolic apical murmur audible the question arises, How long is it to be expected that these signs will last? Although, of course, it is impossible correctly to answer this question yet we are not altogether without knowledge on this point. The period during which the pulse remains irregular varies within considerable limits; in the mildest cases it may be only ten days or a fortnight and in the most severe four or five months. I have recently seen two patients who were suffering from heart symptoms following diphtheria. One of them, a child, aged four years, had suffered from diphtheria five months previously and the mother complained that if he got excited or ran about he became blue and short of breath; the pulse was 132 in frequency and quite regular; the cardiac impulse was just outside the nipple in the fifth left intercostal space and the first sound was short. The other case was that of a boy, aged 11 years, who had fainted twice within six months. He had suffered from diphtheria four years previously and at the time of examination the pulse was irregular and intermittent, the heart showing no signs of dilatation. This case shows that at very late periods following the disease a latent weakness of the heart may be brought out as the result of strain. The more degeneration there is produced in the heart the longer will the signs last; therefore in all severe cases showing heart failure the patient and his friends must be warned that prolonged rest in bed will be necessary, possibly for more than eight weeks. I say more than eight weeks, because cases have been recorded of sudden death occurring when the patient has been allowed to get up after being kept in bed two months. I have never heard of death occurring suddenly after the third month, therefore, if at this time the signs still persist, the patient may be allowed to sit up and gradually regain his old habits. The general rule would then be that as long as the pulse remains irregular the patient should be strictly confined to bed but that after the third month, although the irregularity may not have quite disappeared, strict confinement to bed is not absolutely necessary. All signs of dilatation of the heart may have long disappeared before the pulse regains its regularity. It is not always an easy thing to persuade the patient that confinement to bed is necessary, because he has absolutely none of the usual symptoms accompanying a heart lesion, such as dyspnoea and so forth, and therefore will not believe that there is any danger. I have known such a patient receive a wholesome warning in the shape of a fainting attack when he attempted to disobey orders. Besides confinement to bed, sitting up and playing with toys must be forbidden in the earlier stages, the bowels must be made to act easily, the diet should be plain and nourishing, and it is all the better for most patients if the friends can be excluded.

Paralysis may come on whilst the pulse is irregular but it does not affect the prognosis or treatment materially unless the respiratory muscles are paralysed or vomiting commences. The normal effect of inspiration on the circulation of the blood is to aspirate blood into the heart from the extra-thoracic veins and thus aid in the diastolic filling of the right heart; at the same time the circulation through the pulmonary capillaries is rendered more free and hence more blood flows to the left side of the heart and the circulation is thus materially aided. If the respiratory muscles are paralysed the movements are slower and more imperfect and thus an obstacle is opposed to the diastolic filling of both right and left sides of the heart; at the same time this effect

last summer. The woman applied for treatment at the Bourne Valley Dispensary. The appearance of the "sore" of which she complained was that of a large mature vaccine vesicle and on inquiry I learned that her baby had been vaccinated a fortnight before and that the arm had "taken" well. The exact manner in which the virus had been transferred could not be ascertained. The baby's finger-nail



seems the most probable instrument of inoculation. The lip, as the illustration shows, was much swollen and it was very painful; there was considerable constitutional disturbance—pyrexia, headache, &c. These symptoms subsided in a few days and the vesicle ran the usual course.
Parkstone.

A FURTHER CONTRIBUTION TO THE STUDY OF MENTAL FATIGUE IN SCHOOL CHILDREN.

BY DR JOSEPH BELLEI,
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It is very useful to compare the mental fatigue produced in school children by the afternoon lessons (1) when there is only a short rest between the forenoon and the afternoon lessons and (2) when this rest is greater, in order to see if this last system of school hours is better than the first one. In my treatise on "Mental Fatigue in School Children" I have collected the results that I obtained with regard to afternoon teaching when this began only three-quarters of an hour after the conclusion of the forenoon classes, the interval of rest being from 12 noon to 12.45 P.M. and I am therefore in a position to compare these results with those I obtained last year, in which the afternoon lessons began two hours after the conclusion of the forenoon classes, the interval of rest being from 12 noon to 2 P.M. During this time the poorer children received a meal supplied at the public expense and those who were better off went to their homes.

As in the year 1900 I used the dictation method in these researches and in order to be able to compare the results obtained at two different periods I employed last year at the

beginning and at the end of the afternoon classes the same dictation exercises as in 1900; I also took care that in the new one prepared for the experiments of last year the children should find the same difficulties as in the other two. The schools in which the trials were made were the same in which I experimented five years ago. The first dictation was given to the children at 2 P.M. when school was resumed for the afternoon classes, the second at 2.45 P.M., and the third at 3.30 P.M. during the last half hour of the lesson. For the correction and counting of mistakes I used the same method that I used in my work of 1900, reckoning separately mistakes and corrections made by the children. I also counted the children who did not make mistakes and divided the others into groups corresponding to the number of mistakes that they had made.

I do not report here the results obtained in all the classes but I have summarised them as if there were in all only two containing children of the average age of 11 years and eight months. I also show here the tables exhibiting the results obtained in 1900 in order that I may be able to compare the latter with the former and draw the conclusions that follow from the comparison.

TABLE I.—Boys' Schools: General Summary of Results of the Year 1905.

Trial.	Hours (p.m.)	Average age.	Written letters	Mis- takes.		Differences.	Auto- corrections.		Boys who did not make mis- takes.		Average of mistakes for every boy.	Below the average.	
				Total.	Per cent.		Total.	Per cent.	Total.	Per cent.		Total.	Per cent.
1	2	11 years and 8 months.	97,474	330	0.338	—	63	0.064	157	48.1	1.01	244	74.8
2	2.45		95,368	811	0.841	+0.503	111	0.115	50	15.7	2.55	192	60.5
3	3.30		93,820	1,849	0.859	+0.018	140	0.141	57	17.5	2.62	190	58.6

Boys.—Table I. shows in a concise form the results obtained last year in schools for boys. It will be seen that after three-quarters of an hour of lessons the boys made a percentage of mistakes 0.503 greater than the corresponding number obtained at the moment of the beginning of lessons after the midday rest. Also the percentage of auto-corrections was 0.051 higher at 2.45 P.M. than at 2 P.M. and the percentage of the boys who did not make mistakes fell from 48.1 at 2 P.M. to 15.7 at 2.45 P.M. At 3.30 P.M. the percentage of mistakes augmented only by 0.018 and that of auto-corrections by 0.026, while the percentage of boys who did not make mistakes rose from 15.7 to 17.5. The general results are that from the moment of the beginning of the afternoon lessons at 2 P.M. to the moment of the end of the school at 3.30 P.M. the percentage of mistakes augmented by 0.521 and that of the auto-corrections by 0.077, while the percentage of the boys who did not make mistakes diminished by 30.4 and the average of mistakes for every boy went from 1.01 to 2.62.

TABLE II.—Boys' Schools: General Summary of Results of the Year 1900.

Trial.	Hours (p.m.)	Average age.	Written letters.	Mis- takes.		Differences.	Auto- corrections.		Boys who did not make mis- takes.		Average of mistakes for every boy.	Below the average.	
				Total.	Per cent.		Total.	Per cent.	Total.	Per cent.		Total.	Per cent.
5	12.45	11 years and 4 months	57,600	650	0.730	—	69	0.073	61	20.89	2.19	162	55.4
6	2		53,340	1,348	1.503	+0.773	124	0.133	17	5.86	4.64	174	60.0

From Table II. it will be seen that in the year 1900, during the same period of time—namely, after two hours of lessons—the percentage of mistakes for every boy augmented

¹ Bologna Regia Tipografia, 1901. A short article of mine on the same subject appeared in THE LANCET of May 11th, 1901, p. 1330.

yielded 150 worms and the second 30 more; they unfortunately left for England before a third dose could be given. After this striking result I determined to try the method in other cases and during the summer I employed it at the hospital, not only on my own cases but also on those of my colleague during his absence on leave.

Our previous routine method was as follows. After the patient had fasted during the day a gramme of thymol was given in cachet in the evening; on the next morning the dose was repeated and followed by a purge. But often the drug produced great depression of the heart with slowing of the pulse, and artificial stimulation in the form of strychnine and strong coffee had to be resorted to, and fatal results had even occurred. The patients on thymol were therefore always a source of anxiety to the sister in charge and to the hospital orderlies and much time was wasted in watching them. A safer method was therefore much to be desired.

The treatment below described fulfils, in my opinion, this requirement and has been followed, when properly carried out, by very good results. I do not, however, consider it absolutely perfect, as there are occasional failures, but I am certain that it is more successful than thymol is in such doses as can be given in safety. Dr. Hermann described in his paper several methods of treatment—with thymol, filix mas, and eucalyptus, but concluded that the last drug was the most successful; his formula was as follows: eucalyptus oil, 2 grammes; chloroform, 3 grammes; and castor oil, 40 grammes. This formula I used at first and then, finding that no ill effects were produced in many cases, I increased the doses as follows: eucalyptus oil, 2.50 grammes; chloroform, 3.50 grammes; and castor oil, 40 grammes.

The following is the routine method employed by me now at Kasr-el-Aini Hospital. About 6 P.M. the patient takes a saline purge (though this is not absolutely necessary, as for a long time I discarded it, though, perhaps, it is better not to omit it) and then fasts all night. On the next morning at 7 o'clock he takes half the above mixture and in half an hour's time he takes the other half. He is kept in bed still fasting until the bowels act. Should any depression occur after the first half of the drug the second half is omitted. (This happened in the case of the youngest pygmy who only took half the dose.) In young boys and feeble anæmic patients the dose is divided into thirds and given with twenty-minute intervals. The dose can be repeated every other day. This effects a considerable saving of time necessary for treatment. As a rule, from three to four liquid stools follow, though sometimes only one. Dr. Looss, who examined the stools in the earlier cases for me, tells me that in the first stool there are no worms, and that in the first solid stool after the medicine has ceased acting there are also no worms. He found further that the worms are expelled alive. This may account for the absence of worms in the solid stools as the worms may have time to recover and reflex themselves.

Occasionally the first administration is not successful, though why I do not know, and again very occasionally after one or two negative results a few worms appear. This may be accounted for in some instances, as Dr. Hermann suggests, by the fact that the worms, having entered through the skin just before admission, have not reached the gut until after the lapse of some time. Though in one case (which will be referred to again) a few days after an unsuccessful administration some worms were found *in situ* at the post-mortem examination.

The earlier cases were examined by Dr. Looss, but later I detailed a student week by week during the summer to examine the stools. Unfortunately, however, owing to stress of work on several occasions the stools were thrown away unexamined and so the results are not quite so full as I should like them to have been.

In 44 cases it was wholly successful, as one or more further doses of the eucalyptus mixture yielded no more worms. In some, also, one or more doses of thymol were given with the same object and the same result. In 21 cases a single dose was sufficient, one confirmatory dose of the eucalyptus mixture being given in 15, two extra doses in four, and in one two doses of the mixture and two doses of thymol with negative result. In four of this series thymol had been previously given before the eucalyptus was tried. In 16 cases two administrations were sufficient, as confirmatory doses showed. In some of these, as already mentioned, the first dose was unsuccessful and in several others the second dose expelled more than the first dose. In three cases three doses were necessary and in four cases four doses were given.

One of these latter cases is very instructive. The first dose having expelled no worms thymol was given twice with a negative result; the patient was then given eucalyptus five times—the first three of these expelled worms whilst the last two doses yielded none. In 26 other cases, including the pygmies, it was very efficient, but the patients left hospital before confirmatory doses were given; thus in one case after 76 worms were expelled by the first dose the patient insisted on going home. So whether these were completely cured or not is uncertain.

In the majority of cases, with the exception of a first administration, if a negative result was once obtained further dosage expelled no more worms. The following instances are exceptions: 1. A man, aged 20 years; the second dose expelled none but the third expelled 76 and the fourth 33, the fifth being negative. 2. A man, aged 20 years; the fifth dose expelled none but the sixth expelled six. 3. A man, aged 25 years, who was extremely weak and anæmic, took the eucalyptus mixture on July 22nd, with the result that 47 worms appeared; a further dose on the 26th expelled none; he died on the 29th and 21 worms were found post mortem. (This case is not included with the successful cases above.)

In 29 other cases the mixture was given in some for diagnosis and in some for treatment. In 23 no worms appeared, in five the stools were lost, and in another thymol expelled two worms after two doses of eucalyptus had failed. In three other cases the following results were obtained. In one after the first dose of the eucalyptus mixture the stools were not examined but a dose of thymol expelled 13 worms; a second dose of eucalyptus yielded none. In another the first dose of eucalyptus expelled one worm; then thymol expelled four and a further dose of eucalyptus five. In the third a dose of eucalyptus and a dose of thymol were unsuccessful but a second dose of thymol expelled ten and a dose of eucalyptus seven; a final dose gave a negative result.

The most successful cases were as follows. A first dose expelled 329 worms, a second none. In another the first dose expelled 270 in spite of previous dosage with thymol. In a third the first dose expelled 37, the second 300, and the third none. In a fourth case the result of the first administration was not examined but the second yielded 150 and two further doses none.

That the chloroform is essential is shown by the fact that in three cases where the ova were present chloroform water was given in error instead of chloroform, with a negative result. Thus the treatment has been employed in 103 instances (the cases in which chloroform water was given being excepted), in 44 of which it was entirely successful and in 26 efficient, and in the other 33 the result was either unknown or else negative, the treatment being employed in some for diagnosis, or else mixed treatment was adopted. In one case, that of a patient who died, it was only partially successful.

I think, however, that it is obvious from a consideration of the above results that the treatment is satisfactory with reference to its vermifugal effects. Further, it is not unpleasant for the patient, the long fasting being unnecessary and the taste of the mixture not offensive. It is cheaper and repetition being possible three times a week the stay in hospital is shortened. Lastly, the absence, or rather rareness, of cardiac depression as a result is a good feature. All these facts make it an advance in treatment. As regards the dosage, if the patient be strong and fairly healthy I give the larger dose, but if very young (12 years of age or so) or very weak the smaller dose given in thirds. Oxyurides are freely expelled by it and I have used it in one instance to expel a tapeworm with success.

Calco.

ABERRANT VACCINIA.

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A VACCINATION vesicle in an anomalous situation is perhaps no very great rarity; they are always worthy of report as awkward questions of diagnosis may be raised by them. I was fortunate enough to secure an excellent photograph of a case of this kind that came under my observation

oedematous and closed. On the 22nd the swelling extended to the right side of the nose. On the 23rd pustules appeared on the left cheek, then on the right leg, chest, and left forearm, till they gradually spread over the whole body. An ulcer appeared inside the left nostril discharging greyish-brown pus. There was no albuminuria throughout the illness. The patient was now semi-comatose and became unconscious 24 hours before death. The temperature ran up to 107° just before death which took place at midnight on the 24th. On the 23rd a culture was made from the blood and some fluid was withdrawn from the right knee-joint.

Necropsy.—The face, right arm, and both legs were much swollen, the skin pitting on pressure. There were swellings and pustules as described above. The cheek muscles were infiltrated with pus; the mucous membrane of the mouth was very sloughy; there were no nodules on the hard palate. As regards the middle ear there was no pus in either cavity; the maxillary antrum (left side) contained yellow glairy pus (like that in the right knee-joint) and the mucous membrane was studded with a few small yellow nodules resembling tubercles. On the ala of the left nostril there was an unhealthy-looking ulcer exuding greyish-brown pus but the nasal septum was hyperemic only and showed no nodules and no ulceration. The meninges and the brain were normal. The mucous membrane of the neck, the trachea, and the larynx was studded with minute grey and larger yellow nodules, there being no ulceration, while that of the upper part of the oesophagus was studded with nodules similar to those on the wall of the trachea and larynx. The thorax, the pericardium, and the heart were normal. There were adhesions and fluid at the left base of the pleura. On removing the sternum scattered nodules were seen over the surface of the lungs, grey and yellow in colour and varying in size; they were more numerous over the left lung. Of these disseminated glanders tubercles most were on the surface but some were deeply seated in the lung substance. On section some were tough in consistence, others were broken down in the centre and exuding thin fluid; all were surrounded by areas of inflammation. Except for some enlargement of the liver and spleen nothing of importance was found in the abdominal organs. The cartilages of the right knee-joint were healthy and there was no apparent thickening of the synovial membrane. The joint contained a yellow glairy fluid like that in the maxillary antrum.

Bacteriology.—On Jan. 23rd a needle was put into the right knee-joint and some yellow, glairy, odourless pus was obtained; this pus gave a pure culture of an organism which morphologically and culturally resembled the bacillus mallei (a subculture on potato showed yellowish moist colonies which ultimately turned brown). The pus was therefore sent to the Jenner Institute for intraperitoneal inoculation into a male guinea-pig and it produced orchitis and death in 12 days. The cultures made from the exudate of the tunica vaginalis of the dead guinea-pig were not, however typical, and a second guinea-pig inoculated with these cultures remained quite well except for a small swelling at the seat of inoculation. In explanation of this apparent discrepancy Zieler¹ is quoted by Bulloch² as showing that inconstant results are obtained as regards a typical "Strauss reaction" when pus from a human source is directly inoculated, whereas with pure cultures the result is unequivocal. I made the mistake here, therefore, of using the pus instead of the pure culture for inoculation. The blood culture grew staphylococci only and further cultures made at the post-mortem examination from the pustules and nasal discharge were contaminated with cocci and other organisms.

Histology.—A section through a nodule in the lung showed a mass of leucocytes in the centre, surrounded by epithelioid tissue, in which the alveoli were obliterated; further out the alveolar walls were much thickened and catarrhal cells were present in the alveoli. Sections of lung stained for organisms by Noniewicz's method showed some rod-shaped bacilli which were not, however, Gram negative and were probably putrefactive (the post-mortem examination was made 26 hours after death). The sections were kindly undertaken by Dr. Helen Chambers and further ones of the liver, the kidney, the spleen, the submaxillary gland, the nasal septum, the nasal ulcer, the pustules on the skin, the nodules in the larynx and maxillary antrum, the muscle of the face,

and the bone marrow were stained and searched for micro-organisms with the same disappointing result. I think, however, in some of these a few faintly staining organisms can be made out resembling bacilli mallei.

Remarks.—I should like to point out the close resemblance between this case and the second case reported by Dr. E. W. Goodall in THE LANCET;³ both cases were mistaken for rheumatic fever at the onset and in both the bacillus mallei was isolated from fluid obtained from a knee-joint. Secondly, the still closer parallel between it and the case mentioned in a leading article in THE LANCET,⁴ that of a horse-keeper in the employ of the Andrew Star Omnibus Company. In this case there was an onset with pleurisy, followed by pain in various successive joints, and the patient was regarded as suffering from rheumatic fever. After admission to a hospital pustules developed and the condition was considered to be one of septicæmia. A day before death it was suspected that the case might be one of glanders and cultures confirmed the diagnosis. Other points of interest in the case which I have recorded are: (1) the long interval between the involvement of the joints—too long for rheumatic fever; and (2) the combination of high temperature with a low pulse and respiration rate; this was well marked throughout the illness.

Portman-street, W.

RUPTURE OF THE UTERUS, WITH ILLUS- TRATIVE CASES.

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SOLUTIONS of continuity, with or without loss of substance, may arise during labour in any portion of the parturient canal. In the order of frequency the parts affected are the perineal body and lower end of the vagina, the cervix and upper part of the vagina, and the body and fundus of the uterus. The injuries vary very much in their extent and importance, the gravest being those that affect the body of the uterus and the upper part of the vagina. The lesion may arise suddenly, as in the case of rupture properly so called, or gradually, as the result of ong-continued pressure of a hard part of the fœtus on some particular portion of the genital canal. In the latter case the maternal tissues may be slowly burst asunder in the further course of parturition or they may be destroyed by a process of sloughing that is only completed some days after labour is ended. Ruptures of the uterus and upper part of the vagina may be complete, involving all the coats, or incomplete. In the latter case the lesion most commonly extends from within outwards, the muscular layers being more or less completely sundered; in rare cases the peritoneal coat only is affected or the tear begins in it and spreads inwards into the muscular layers. Where the injury involves the whole of the coats and a communication is established between the cavity of the peritoneum and that of the genital canal it is said to be perforating, as opposed to non-perforating or incomplete where the abdominal cavity is not opened. Estimates of the frequency of uterine rupture during labour vary very greatly, from 1 in 482 labours (Collins), 1 in 3403 (Jolly), to 1 in 4429 (Ramsbotham). The higher proportions have occurred in the practice of lying-in hospitals where there is a larger number of difficult deliveries. Taking the lower ratio as more nearly representing the actual facts, four or five ruptures probably occur every year in the city of Birmingham; many, especially of the graver cases, are, however, not recognised but are certified as deaths from post-partum hæmorrhage or from collapse or syncope following delivery.

Ruptures of the uterus during labour occur more frequently in multipara than in primipara, in the proportion of more than 8 to 1 (Bandl, 12 per cent. primipara). In a first labour the stronger pelvic attachments of the cervix and vagina and the firmer abdominal pressure tend to prevent the upward movement of the contraction ring, while the uterine tissues appear better able to resist excessive tension. When abnormal

¹ Uter. Chronischen Ritz beim Menschen, Zeitschrift für Hygiene, Band xlv., 1903.

² Centralblatt für Bakteriologie, Band xxxix., 1903, Heft i.

³ THE LANCET, August 26th, 1905, p. 529.

⁴ THE LANCET, June 17th, 1903, p. 1361.

by 0.778, and that of auto-corrections by 0.060, whilst the percentage of children who did not make mistakes diminished by 15.03. The average of mistakes for every boy went from 2.19 to 4.64. Between the results obtained in 1900 and those obtained in 1905 there are differences which required to be analysed. In the year 1900 the percentage of mistakes was 0.257 higher than in 1905, whilst the percentage of the auto-corrections was a little smaller. The percentage of boys who did not make mistakes after two hours of lessons was higher in the year 1905 than in 1900, but was higher in relation to those who did not make mistakes at the beginning of the afternoon lessons than to those who made mistakes at the end of the afternoon lessons. In the year 1905 the difference in the percentage between the results obtained at 2 P.M. and those obtained at 3.30 P.M. was 30.6, whilst after the same period of time in the year 1900 it was only 15.03. The average of mistakes for every boy was higher in the year 1900 than in the year 1905, but it was higher also at the beginning of the afternoon lessons immediately after the midday rest and therefore the difference, although great, is less than appears at first sight. From this it may be concluded that the work done by the boys during the afternoon lessons was in 1905 a little better than in 1900, although also in 1905 after only a quarter of an hour's work a great number of mistakes were found.

TABLE III.—*Girls' Schools: General Summary of Results of the Year 1905.*

Trial.	Hours (P.M.)	Average age.	Written letters.	Mis- takes.		Differences.	Auto- cor- rections.		Girls who did not make mis- takes.		Average of mistakes for every girl.	Below the average	
				Total.	Per cent.		Total.	Per cent.	Total.	Per cent.		Total.	Per cent.
1	2	11 years and 8 months.	55,614	177	0.318	—	36	0.064	78	41.9	0.95	78	41.9
2	2½		54,112	349	0.644	+0.326	46	0.085	46	25.8	1.96	83	46.6
3	3½		58,865	434	0.737	+0.093	73	0.124	41	21.2	2.249	129	66.8

Girls.—Table III., which summarises the results obtained in the girls' schools in 1905, shows that after three-quarters of an hour of lessons—namely, at 2.45 P.M.—the girls made a number of mistakes higher than at 2 P.M., corresponding to a percentage of 0.322. The percentage of the auto-corrections went from 0.064 at 2 P.M. to 0.085 at 2.45 P.M. The percentage of girls who did not make mistakes was 16.1 less at 2.45 P.M. than it was at 2 P.M. At 3.30 P.M. the percentage of mistakes was higher by only 0.093 and that of the auto-corrections by 0.039, whilst that of the girls who did not make mistakes diminished by 4.8. Therefore it results that from 2 P.M. to 3.30 P.M. the percentage of mistakes augmented by 0.419 and that of the auto-corrections by 0.060, whilst that of the girls who did not make mistakes diminished by 20.7. The average of mistakes for every girl went from 0.95 to 2.24.

TABLE IV.—*Girls' Schools: General Summary of Results of the Year 1900.*

Trial.	Hours (P.M.)	Average age.	Written letters.	Mis- takes.		Differences.	Auto- cor- rections.		Girls who did not make mis- takes.		Average of mistakes for every girl.	Below the average	
				Total.	Per cent.		Total.	Per cent.	Total.	Per cent.		Total.	Per cent.
5	12½	11 years and 8 months.	36,300	108	0.297	—	26	0.071	58	50.87	0.94	71	52.50
6	2½		37,453	266	0.710	+0.413	46	0.122	23	18.40	2.12	82	65.60

The results obtained in the year 1900 and set out in Table IV. show that during two hours of lessons the percentage of mistakes augmented by 0.413 and that of the

auto corrections by 0.051, whilst that of the girls who did not make mistakes diminished by 32.47. The average of mistakes for every girl augmented by 1.18. The differences between these two trials are so little that one can conclude that the results obtained from the girls were identical in the year 1905 and in the year 1900.

From the two tables which summarise the results obtained in 1905 it will appear that in respect of quality there is very little difference between the children's school work done at 2.45 P.M. and at 3.30 P.M., but that, on the other hand, there are great differences between the school work done at 2 P.M. and at 2.45 P.M. The fact that the quality of the school work is almost the same at 2.45 P.M. and at 3.30 P.M. proves that after three-quarters of an hour of afternoon lessons (even if there is a two hours' interval between the forenoon and afternoon classes) the children are so tired that their work is full of mistakes and becomes only a little worse after another hour of lessons. As the results obtained in the boys' schools and in the girls' schools were identical, it may be said with certainty—as I have already mentioned in my observations on mental fatigue—that although the children are after the mid-day rest in a condition of mind capable of accomplishing the best work of the day, nevertheless they cannot support three-quarters of an hour of mental application without betraying mental fatigue. Again, the results obtained in the year 1905, when there was a rest of two hours between the morning and the afternoon lessons, are almost identical with those obtained in the year 1900 when this rest was only of three-quarters of an hour's duration. It is therefore obvious that the first method of teaching presents no real advantages over the last one.

The conclusions at which I arrived in the year 1900 are accordingly confirmed by these later researches and I feel myself entitled to repeat with more certainty than ever the following words with which I closed my book upon mental fatigue in school children: "The work done by the children during the afternoon lessons is, on account of the great mental fatigue that it involves, of no advantage to their instruction but is full of danger to their health."

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A CASE OF GLANDERS.

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A MAN, aged 37 years, a porter in the meat market, was admitted into the Royal Free Hospital on Jan. 6th, 1903, under the care of Mr. James Berry, to whose kindness I am indebted for permission to publish this case. The illness apparently began on Dec. 1st, 1902, with a slight attack of pleurisy, which lasted ten days, after which the patient resumed work. While out walking, however, on Dec. 16th he was seized with severe pain in the left leg and for the next three weeks was treated and sent into hospital as a case of acute rheumatism.

On admission the temperature was 102.4° F., the pulse was 96, and the respirations were 26. There was no swelling or inflammation of the hip or leg, but much pain on movement of the thigh; there was tenderness in the region of the hip-joint and down the back of the leg, especially behind the knee; the leg was easiest in the position of semi-flexion. On Jan. 14th severe pain was felt in the right arm and the elbow-joint became swollen; definite swellings also appeared above and below the joint in the subcutaneous and muscular tissues extending half-way up the arm and a quarter the way down the forearm. The skin there was reddened and pitted deeply on pressure and the condition resembled that of cellulitis. Some crepitations were heard over the lungs. The temperature ranged from 102° to 104° and the patient was obviously very ill. The case was now regarded as one of septicæmia. The left ankle and right knee-joint became successively swollen and painful. On the 19th, five days before death, pustules appeared on the right arm over the swollen areas; these were discrete at first, with hard indurated base, varying in size from that of a pin's head to that of a split pea; later these became confluent, breaking down to form serpiginous ulcers. On the 20th a swelling appeared on the left chest, which fluctuated, and the left eyelids became

Another and more generally accepted view is that the contraction ring is a phenomenon peculiar to labour, that it does not correspond to any definite anatomical structure, but that as the direct result of contraction it is formed at a position several centimetres above that of the real or anatomical internal os. On this theory the portion of the body of the uterus between the contraction ring and the internal os is called the lower uterine segment and it is differentiated from the cervical canal by being lined with a smooth decidua which ceases below in a fairly definite line at the level of the internal os. The discussion of the exact nature of the lower uterine segment has become very complicated and prolix, so that it cannot with advantage be entered upon here, and, moreover, the question is one rather of academical than of practical interest. The level of the contraction ring corresponds in front nearly to the place where the peritoneum becomes closely united with the muscular wall of the uterus and this is a little above the upper limit of the empty bladder. In the course of the first stage of labour as the external os dilates the cervix in front is drawn up and carries with it the bladder above the pubes. At the end of the first stage, therefore, the level at which the contraction ring forms is at a position nearly midway between the pubes and the umbilicus.

When any obstruction to delivery exists the uterus continues to contract strongly, its walls gradually becoming thicker and its cavity smaller, so that the ovum is pressed more and more into the lower distensible portion of the parturient canal. In equal steps with this change in relations the contraction ring constantly rises higher and higher until it may become level with, or even higher than, the umbilicus. At first the pelvic fastenings of the cervix, especially the connective tissue at the bases of the broad ligaments, and the utero-sacral ligaments yield and allow the cervix, together with the vagina, to rise higher and higher into the abdomen. The stretching capacity of these fastenings is finally exhausted as well as the distensibility of the vagina and cervix and then any further contraction of the uterus leads to rupture. The liability to rupture is much greater when the lower uterine segment is unequally distended, as, for example, in pendulous abdomen with anteversion of the uterus; in lateral obliquity of the uterus, as frequently seen in multiparæ; in contracted pelvis, when the vertex undergoes Nægele's obliquity; and in transverse presentations, where the side on which the head lies is always more distended.

SYMPTOMS AND DIAGNOSIS.

The mechanism of production of uterine rupture during labour being understood it is possible to deduce principles of treatment. But it is first necessary to be able to recognise at the bedside that a rupture has occurred and it is of even greater importance to be able to foretell that rupture is threatening, because here, as always, prevention is better than cure.

Threatened rupture.—When labour is protracted a careful watch has to be made for the symptoms of beginning exhaustion of the patient. The first and most easily recognised of these symptoms is found in the pulse and when this does not drop below 100 even in the intervals between the pains immediate delivery is indicated. If the labour be still left to itself the general condition of the patient rapidly deteriorates, as shown by an anxious expression of countenance, restlessness, and groaning even in the intervals between the pains, by a rise of temperature to 101° F. or more, and by a gradual increase in the pulse-rate. An examination of the abdomen then shows that the upper contracted part of the uterus forms a firm well-defined tumour in which fetal parts cannot be made out. Across the front of the uterus the contraction ring is seen or felt as a transverse or oblique depression; when first noticeable this is at a position two or three inches above the pubes, and as the uterus retracts more and more the contraction ring gradually rises towards, or becoming more and more clearly defined. Below the lower segment of the uterus takes up more and more of the fetus and forms a rounded swelling tender to palpation. It is necessary not to confound these signs with those present when the liquor amnii has escaped and the uterus has become closely applied to the neck of the fetus; here the sulcus corresponding to the neck may be mistaken for the contraction ring and the broadening of the uterus over the shoulders for the

retracted uterus; in the intervals between the pains, however, fetal parts can be felt. In threatened rupture the round ligaments become stretched so as to form tense cord-like bands running almost vertically. When the contraction ring runs very obliquely across the abdomen and the round ligament of one side only is very tense and easily felt it may be inferred that the lower segment is becoming unequally and dangerously stretched and that unless speedy delivery is effected rupture is imminent.

Actual rupture.—When the rupture actually takes place the symptoms may occur with startling suddenness or may come on gradually. In a typical case labour is progressing with strong pains when in an instant, at the acme of a painful uterine contraction, an intense local pain is experienced, coupled with the feeling of something having given way; the labour pains cease, while the local pain becomes continuous and severe, the face drawn, the eyes dull, and there are great anxiety and feeling of oppression. Symptoms of collapse rapidly set in, shown first in the pulse, which becomes frequent, small, and soft; pallor, cold extremities, cold sweat, hurried breathing, and attacks of unconsciousness with or without convulsions are rapidly followed by the death of the patient. In most cases the blood escapes from the vagina in quantities varying considerably with the tearing and crushing of the parts; the site of the rupture if it can be reached is found to be notably tender; the presenting part of the fetus recedes and becomes more moveable and if the fetus has escaped into the peritoneal cavity may disappear altogether. When the fetus has escaped into the peritoneal cavity a change in the form of the abdomen is observed: the uterine fundus disappears, the abdomen becomes broader, and the fetal parts can be felt with remarkable clearness through the abdominal walls. When the rupture is lateral the empty and contracted uterus may be felt on one side of the lower abdomen. The fetal heart ceases to be audible and fetal movements cease.

In a very large proportion of cases the symptoms are less acute than those above described. Collapse may only gradually develop, sometimes after many hours, or may be absent when the rupture is incomplete or gradual. The amount of shock varies very much and depends not so much upon the size of the rupture as upon the quantity of blood lost and upon the soiling of the peritoneum. Hemorrhage may be concealed and the blood, instead of escaping through the vagina, may be poured out into the peritoneal cavity or extravasated into the pelvic connective tissue. In the latter situation it may give rise to a large subperitoneal hæmatoma at the side of, or behind, the uterus and may raise the peritoneum and form a mass extending even as high as the kidneys. Much less commonly emphysema occurs; crepitation due to the presence of air may be felt in the uterine wall; or the air may be pressed into the pelvic connective tissue and thence spread to the mons Veneris, the thighs, and over the abdomen as high as the chest. From such a uterine emphysema fatal air embolism may arise.

Sometimes symptoms of bleeding with a moderate degree of local pain are the only phenomena of the first few days even in large ruptures. In some cases, usually when the whole or the greater part of the child remains in the uterus, the labour pains may continue. In a few recorded instances of rupture following version, internal or external, the patient has died in a few days after delivery without having shown any of the usual symptoms of rupture.

In the upper part of the vagina perforating ruptures occur similar in their importance to uterine ruptures. In this position lacerations appear to be relatively more often due to external violence; the vagina may be torn from the cervix in front, behind, or even all round. The imminence of rupture in this situation cannot be so easily detected as in the case of the lower uterine segment, although extraordinary tension of the vaginal vault may sometimes be observed as a warning sign. When rupture takes place here bleeding is usually less profuse than in rupture of the lower uterine segment; labour pains do not so suddenly cease and shock is, as a rule, less because the child's body only gradually escapes into the peritoneal cavity. Prolapse of the intestine is more frequent in these cases and may lead directly or indirectly to a fatal issue as in Case 1 about to be related. The prognosis is grave: out of 47 cases collected by Ludwig 27 died—six from hæmorrhage, 16 from peritonitis, and five from other complications. The treatment depends upon the same principles as that of rupture of the uterus itself.

In the following case a rupture had occurred in the posterior vaginal fornix probably as the result of criminal

stretching of the lower uterine segment has once taken place it is probable that in subsequent deliveries over-stretching occurs more readily and quickly. Moreover, in multiparae the uterus is often to be found displaced to one side, or in the case of a pendulous abdomen to the front, so that excessive stretching easily takes place at one part of the circumference of the lower uterine segment. Rupture is relatively more frequent in poor people than among the well-to-do and in elderly women because of the influence of repeated deliveries. The child is more frequently male; Spiegelberg found 48 boys in 67 cases, a proportion of more than 2 to 1. Predisposing causes, congenital or acquired, may be present in the uterus. Among the congenital conditions, anomalies of development of many kinds, as, for instance, incurviform, arcuate, one-horned, or double uterus, may be accompanied by abnormal thinness of the walls, especially at the fundus in the neighbourhood of the tubal angles, and in rare cases the thinning may be so great that, just as in tubal gestation, rupture takes place either spontaneously or after an injury. Frequently also in malformations there is congenital narrowing of the cervical canal and of the external os, so as to give rise to obstruction in delivery.

A predisposition to rupture is sometimes acquired, as where Caesarean section has previously been performed, or where lacerations followed by cicatrization have occurred in previous labours. In recent years certain methods of performing vaginal fixation have given rise to rupture in succeeding labours. Sometimes the growth of a tumour is a cause, as in certain fibroids and in cervical cancer; in a collection of 180 cases of labour complicated by cancer Herman found that no less than 11 of the patients died from rupture of the uterus. Abnormal friability of the tissues has been described in many cases and may be caused by certain local chronic degenerations and indurations the result of chronic metritis; in many cases of placenta prævia this friability is well marked. The intimate nature of the changes is not understood; fatty degeneration has been suggested but not proved; a similar condition of easy lacerability without obvious lesion is occasionally observed about the perineum and is as little understood there as in connexion with the uterus and vagina. In one of the cases about to be related (Case 2) this friability was extremely well marked. Rupture scarcely ever occurs except when labour has been of long duration and the liquid amni has long drained away. It may happen, however, while the external os is still narrow, especially when the presenting part is high and no proper bag of membranes has been formed. Very rarely the accident has occurred while the membranes were intact; in such cases the membranes have been said to be very resisting, and the lower segment has been weak and thin walled.

In the great majority of cases the accident depends upon mechanical difficulties in the passage of the child, of which the most common are contracted pelvis, transverse presentation, and hydrocephalus. In 230 cases collected by Merz contracted pelvis was the cause in 70, transverse presentation in 26, and hydrocephalus in 18 cases. In cases of extreme pelvic contraction obstetric interference takes place as a rule earlier and rupture is less common than in those of moderate degree. In the latter cases the head is early driven into the brim and may there fix the lower end of the cervix, while the lower segment of the uterus becomes expanded upwards and thinned. Incarceration of the end of the cervix is, however, not essential and is not a common factor in the causation of rupture. Exostoses and hard tumours in the pelvis may bore through the peritoneum and lead to rupture from without inwards. Hardness and rigidity of the external os and cervix, consequent on the presence of tumours or on cicatrization of former lacerations or sloughings, may cause rupture of the lower uterine segment. Excessive size or hardness of the head of the foetus or of its body, as in a case from which a specimen has been placed in the Birmingham University Museum, or faulty position as in face or transverse presentations may lead to the accident. Presentation of the placenta is also a common cause of rupture because of the alteration in structure and elasticity of the lower uterine walls consequent upon the development of the placenta in an abnormal situation.

Ruptures are commonly distinguished according to their apparent causation into spontaneous and traumatic. The former are due to deficient power of resistance of some part of the uterine or vaginal wall relative to the pressure brought to bear upon it. Traumatic ruptures require to be divided

into those in which the violence directly produces the lesion and those in which the external force merely hastens an accident already impending. They may be due to the hand or to instruments. Among the latter may be mentioned the forceps, cephalotribe, sharp and blunt hooks, and last, but by no means least, Bossi's dilator and its numerous modifications. The introduction of the hand in performing version may cause laceration, especially if it is not kept quiet and spread out during the pains; or rupture may happen while the foot is being found and brought down, or especially while the foetus is being actually turned. In such cases the accident is shown by the occurrence of bleeding and by the operation suddenly becoming exceedingly easy. As a general rule, even where the lesion appears to be due to injury by the hand or instruments, the way has been well prepared by the previous course of labour, and the trauma is merely the last straw. Even here, however, a higher degree of skill might in many instances prevent the occurrence of rupture. The rupture usually begins in the cervix and lower uterine segment, whence it may be prolonged upwards into the body of the uterus and downwards into the vaginal vault. The next most common position for the rupture to begin is in the upper part of the vagina and the least common situation is in the uterine body. The direction of the tear is generally oblique but may be transverse particularly when it is seated low down, or longitudinal especially when it occurs laterally; in the last case the rupture is often merely a prolongation of the tear that naturally occurs in the cervix during labour. The borders of the rupture are usually ragged, torn, thinned, and infiltrated with blood; in many cases the walls of the uterine body are found to be enormously thickened.

It has already been stated that in the great majority of cases rupture of the uterus depends upon mechanical obstruction to the completion of labour. The manner in which the accident is brought about was first satisfactorily explained by Bandl in papers published in 1875 and since then his mechanical theory has formed a firm groundwork for our knowledge. To understand Bandl's theory it is necessary first of all to consider the changes that naturally take place in the parturient canal in the process of labour. At the end of pregnancy the body of the uterus forms a large bag evenly and completely filled by the ovum. The cervix is by comparison little changed; its walls are soft and its cavity, often slightly dilated, is filled with thick jelly-like mucus. In multiparae the cervical canal measures from three to four centimetres in length, but in primiparae already before labour begins the upper half or more of the canal becomes dilated and taken up into the general uterine cavity, so that there is apparent shortening to two centimetres or even less. The walls of the uterus vary very much in thickness but on a rough average it may be said that those of the cervix measure one centimetre and those of the body rather more than half a centimetre. In the course of labour the parturient canal becomes differentiated into two portions with opposite physiological functions. The uterine body with the exception of its lower segment actively contracts to expel the ovum, while the lower segment, together with the cervix and the vagina, forms a passive distensible cylinder, a kind of delivery tube or excretory duct. The walls of the uterus become thicker and the cavity smaller as the ovum is forced downwards; the vagina, cervix, and lower uterine segment, on the contrary, become gradually distended into a thin-walled cylinder with a diameter of four inches or thereabouts. The length of this cylinder may also measure four inches even in normal circumstances. In this condition the position of the internal os is no longer recognisable to the touch, although on anatomical preparations the decidua can be seen ending abruptly at the junction of body and cervix. The distinction between the active and passive portions of the canal becomes marked sooner or later after the beginning of labour and when the hand is introduced for any purpose into the uterus the limit between the two portions may be recognised as a more or less prominent ridge; in obstructed labour the distinction becomes much more marked and is often visible and palpable through the abdominal wall as a groove or depression running transversely at some distance above the pubes. This boundary marked as a prominence on the inside and a depression on the outside of the uterus, is called the contraction ring. Much discussion has taken place upon its nature and exact relations. According to some observers it corresponds to the internal os, on which view the whole uterine body contracts and only the cervical canal takes part in the formation of the thinned and expanded portion of the parturient canal.

TREATMENT.

It is of the utmost importance to have clear ideas of the best treatment to pursue in a grave emergency such as is rupture of the uterus occurring during labour. Hesitation and delay may be as fatal as the employment of wrong methods. The treatment falls naturally into two divisions—preventive and curative. Prevention consists in the correct management of cases of obstructed labour, especially in the second stage, and includes a proper appreciation of the methods of effecting delivery in these cases and of the indications for putting them into practice. Two golden rules must never be forgotten. The first is that when there is any reason to suspect a cause for obstruction to labour ergot must never in any circumstances be administered until the child is delivered. The second is that in a case of obstructed labour, where the waters have escaped and the signs of tonic contraction of the uterus are present, version must not be performed. In exceptional cases some authorities consider it good practice to make a careful trial of version under deep anaesthesia when the child is still alive, because this is a sign that the stretching of the thinned lower uterine segment is not yet extreme; but as a general rule even when the child is living perforation of the head or decapitation is to be preferred, because the interests of the mother are paramount and her life is in imminent danger.

In protracted labours with strong pains a careful watch should be kept upon the condition of the uterus and of the round ligaments. The position of the contraction ring should particularly be observed, especially during a strong pain, when it may sometimes be seen. In the slighter degrees of pelvic contraction the ring is not always sharply marked, since the presence of the head may lend firmness to the lower segment; careful examination during and between the pains will, however, enable us to distinguish the hard contracted uterine body from the softer distended lower segment and cervix. Of even greater importance is the condition of the round ligaments; when on the threatened side the ligament seems to be inserted at an unusually high level of the fundus and when marked tension persists even in the intervals between the pains there is always a considerable degree of stretching of the lower uterine segment.

When the signs of threatened rupture become marked immediate delivery must be effected. If the external os is not fully dilated multiple incisions or the hydrostatic bag may be employed. The method of extraction of the child must not increase the stretching of the already over-distended lower segment; as a rule, therefore, in vertex presentations perforation is to be preferred to the use of the forceps and in transverse presentations decapitation must be performed.

When rupture has actually occurred the treatment falls into two divisions: first, the extraction of the child and of the placenta and membranes; and secondly, the management after delivery. The delivery of the child may have to be undertaken either through the vagina or by abdominal section. Wherever possible the first method, that through the vagina, is to be preferred. If the head presents delivery by forceps or version should not be undertaken, but perforation and craniotomy should be performed. If the child has partly escaped into the peritoneal cavity without its long axis being displaced it should still be extracted through the vagina either by craniotomy when the head is presenting or by seizing a foot where this can easily be reached. If the child has mostly or entirely escaped into the peritoneal cavity coliotomy must be undertaken for its extraction and the opportunity seized thoroughly to cleanse the cavity and to treat the ruptured uterus by suture or removal.

When the child has been delivered the rupture still remains to be treated and as to the best method great diversity of opinion still exists. Olshausen teaches that in rupture the most rational treatment is to open the abdomen and suture the laceration but admits that the results are not brilliant. Winckel formerly taught that laparotomy was the best treatment but now is of opinion that drainage of the rupture by gauze through the vagina together with a tight abdominal pad and bandage so as to fix the uterus low in the pelvis is best and that donches should be avoided. Lately the routine employment of abdominal or vaginal hysterectomy has been practised; reference has already been made to Varnier's results by the abdominal method; the vaginal operation has been advocated more especially by Schröder and Winter.

As a matter of fact, no one method is applicable to all cases, but in each case the rupture must be treated on its merits. The main factor in deciding the method of treatment is the probability or otherwise of septic infection being already present. When the patient is probably not already infected and the other conditions are favourable the laceration should be treated on ordinary surgical principles with a view to its union; when, as is usual, there is the probability that infection has taken place the uterus should be removed either by the abdominal or vaginal method and free drainage of the peritoneal cavity should be provided for.

In one of my cases where septic infection had probably not occurred delivery of the fetus by decapitation, hæmostasis by sutures and forceps, gauze drainage through the vagina, and a tight abdominal binder were the means of securing a favourable result. This case afforded a good illustration of the fact that sometimes labour may, so to speak, be latent—that is to say, it may progress for many days without being recognised as such by the patient even when she is an experienced multipara.

CASE 2.—The patient, a large fat woman, aged 41 years, was sent to the Birmingham General Hospital at a little before noon on April 12th, 1898, with a note from her medical attendant saying that he had been called to the patient in labour about 10 A.M., that the child's head was then presenting, and that on passing his hand into the vagina with a view to perform version he found a rent at the upper part of the vagina through which his fingers passed into the peritoneal cavity; he immediately desisted and sent the patient to the hospital. The following history was obtained a few days later from the patient and her husband, both of whom agreed that she had completed about seven and a half months of pregnancy. The first five labours were all straightforward; the sixth child was born with the arm round the neck. In the fifth month of the present pregnancy the woman had a fall on to the left knee. On the last day of March, a fortnight before admission, she accidentally struck her abdomen against a wooden drawer, which caused severe pain, illness, and pallor. Since then she had been unable to go to work because "the waters kept flowing"; presumably the accident caused rupture of the membranes. For the last four or five days there had been pains in the back, something like labour pains, according to the patient's account, but not high enough. There had been discharge like matter for the last two days but no bleeding at any time.

On admission the patient showed only moderate symptoms of shock and did not complain of much pain; the fetus lay with the head to the right and limbs to the front; no foetal heart could be heard. Before examining through the vagina the patient was anaesthetised and the vulva and vagina were prepared in the usual manner before operation; a ragged transverse tear fully four inches in length was found in the posterior fornix just below the cervical insertion. The right hand of the fetus passed through the tear into the peritoneal cavity; the margin of the cervix was found round the shoulder of the fetus; a little bleeding was going on. Decapitation was performed by Ramsbotham's hook and the body of the child was removed by traction; the foetal head was easily extracted by bimanual manipulation with a finger in the mouth. Slight bleeding continued and therefore the placenta was removed five minutes after the birth of the child. The uterus did not contract; injections of hot water were therefore employed, followed by plugging with iodoform gauze and afterwards by the injection of ergot deep into the muscles of the buttock. The rent in the vagina was then closely examined; it was found to extend further on the left side where it was continued into the connective tissue at the base of the broad ligament; the left side of the cervix was also found to be torn deeply. There were numerous freely bleeding points as well as general oozing of blood from the torn surfaces. Some bleeding points were secured by over-casting sutures and three large spurring vessels were tied. Great difficulty was experienced in suturing and tying the tissues which were as friable as wet blotting paper; for this reason no attempt was made to bring any part of the edges of the tear together by sutures. Several pressure forceps were applied to bleeding points and left on. A gauze drain was passed into Douglas's pouch which was clean and clear from blood clot. The vagina was then packed with gauze and a large pad of cotton wool was firmly bandaged over the lower abdomen so as to make pressure through the pelvic brim.

At the end of the proceedings the radial pulse could scarcely be felt. Ten minims of strychnine solution were

abortion. Through the tear a coil of sigmoid flexure escaped into the vagina and as the result of strangulation and infection became gangrenous and escaped as a large slough on the ninth day after the placenta was removed. The operation of intestinal anastomosis was undertaken two months later and resulted in the death of the patient, an unfortunate termination which was due, at least in part, to bleeding from the torn uterus.

CASE 1.—A multipara, aged 35 years, was admitted urgently to the General Hospital, Birmingham, on Dec. 18th, 1902, with the history that she had been losing for three weeks and that a fetus of four months' development had come away on the 16th. A medical man was first called in on the 17th and attempted to remove the placenta under chloroform, but finding a rupture of the vagina he introduced a drain of iodoform gauze and advised the immediate removal of the patient to hospital. The patient was very fat and there was a suspicion that the abortion had been criminally procured. On admission she was anaesthetised and the parts were cleaned in the usual manner. An extremely foetid placenta was removed from the vagina and then a coil of large intestine with shining surface, defiled with blood but not much congested, was found in the upper part of the vagina. The coil was well washed with boric lotion and returned into the peritoneal cavity through a tear which extended for four inches across the posterior fornix of the vagina close to the cervical attachment and outwards behind the lower end of the left broad ligament. The uterus could not be pulled down with volsellæ; it was enlarged and its cavity measured five inches. Douglas's pouch was well mopped out and drained by a large strip of gauze with the lower end left in the vagina. On Dec. 23rd thick faecal material was found on the vaginal packing and an enema returned through the vagina. On the 27th a slough comprising about five inches of large intestine came away. Afterwards the whole of the faeces escaped through the vagina, although the general condition of the patient remained quite satisfactory. Two attempts by the vaginal route were made without success to close the artificial anus, which was situated very high up at the apex of a long and narrow vagina.

On Feb. 28th, 1903, a plastic operation was undertaken through the abdomen with the patient in the Trendelenburg position. A corpus luteum cyst enlarged the right ovary to the size of an orange and this ovary and the tube were removed to give room. Two lengths of large intestine ran down the front of the sacrum to the bottom of Douglas's pouch where they were firmly fixed by dense adhesions to the back of the uterus and broad ligaments and to the front of the sacrum. These portions of intestine represented a long coil of the sigmoid flexure from which the extremity had sloughed off. At the lower end of the right one was an opening admitting the tip of the index finger; the left one was doubled upon itself and no opening could be found into its side or tip until boric lotion was injected through the anus, when the coil distended and the lotion was seen to escape from a hole at the apex not larger than a No. 3 catheter. After separating the intestine from its adhesions the two ends were anastomosed by suture. In holding up the uterus with a volsella to enable the adhesions to the sacrum to be dealt with the substance of the organ was torn widely and there was moderate hæmorrhage from this tear as well as from the adhesions. Catgut sutures were applied to stop the hæmorrhage from the uterine tears, a gauze drain was passed from the bottom of Douglas's pouch into the vagina, and the abdominal wound was closed in the usual way. At the end of the operation, which had lasted one hour and 40 minutes, there was great shock from which the patient never rallied. Death took place ten hours later. At the necropsy all the organs were found to be fatty. In Douglas's pouch were several ounces of black clotted blood which appeared to have come from the torn uterine wall. The anastomosis of the gut was perfect.

The prognosis of rupture of the uterus, always very grave, has somewhat improved since the introduction of antiseptics into midwifery. The result depends on immediate and correct treatment being undertaken. In deciding upon the treatment the child may be left out of consideration, its chance being all but hopeless because of the previous long duration of labour and because after the tear there are hæmorrhage and detachment of the placenta, and sometimes also because the umbilical cord is caught and compressed by the rupture. In 237 cases collected by Jolly only 7.5 per

cent. of the children were born alive, and to arrive even at this figure all cases of craniotomy were excluded. As regards the maternal mortality Hugenberger in 298 cases found only about 5 per cent. of recoveries, while in Jolly's statistics one mother in six, or about 17 per cent., recovered. Recovery is most frequent when the fetus has remained wholly or in part in the uterus, or has been extracted through the vagina. In cases of incomplete rupture the outlook, according to Spiegelberg, is as grave as in the perforating form. Secondary hæmorrhage may be fatal, as in the case in the university museum already mentioned. As a rule death is due to diffuse septic peritonitis or later to suppuration of a hæmatoma, or to purulent peritonitis. Schultz, in a collection of 193 cases of rupture from different authors, reckons that in cases left untreated the rate of recovery is 20.2 per cent.; in cases treated by drainage 36 per cent.; and by coliotomy 44.70 per cent. of the mothers are cured. Statistics of lying-in hospitals give the best evidence of the severity of the accident because the whole of the results are known, favourable and unfavourable. In 80 cases in the Berlin Clinic Koblanck found 56 perforating cases with 47 deaths, and 24 incomplete with 12 deaths. Franz has reported 12 cases occurring in the Halle Maternity; of these, two were incomplete and both died; ten were complete, and of these one was moribund on admission and the other nine were subjected to abdominal section, with only two recoveries. Varnier published 23 personal observations in 1901. 11 were treated from 1885 to 1897 by delivery by the vaginal route followed by plugging; of these only one patient recovered. Between 1897 and 1901 12 cases were treated, of which six were treated by abdominal section and repair of the rupture with three recoveries; in the other six death occurred too speedily to admit of laparotomy. A rupture that has healed may again rupture in the next pregnancy, but several observations are on record in which the patient has safely borne a child one and a half to two years later.

The causes of death are manifold. Shock and hæmorrhage, especially when combined, may be rapidly fatal. If the patient survives the immediate accident and if the fetus is expelled into the abdomen the dangers are the same as those of extra-uterine gestation. Secondary hæmorrhage from an artery in the uterine wall may occur even weeks after the rupture. The bladder may be ruptured and extravasation of urine take place into the connective tissue, or, as above related, a coil of intestine may be caught in the laceration and become strangulated.

By far the most common issue in a patient who survives the primary shock is death from the consequence of septic infection. The risk of infection varies directly with the duration of labour, with the number of vaginal examinations, and with the severity and duration of the manipulations necessary for delivery. Putrescible material is present in abundance and the mucus that ordinarily protects the parts from the evil effects of germs is conspicuous by its absence. The fetus may die in the course of the prolonged labour and may then become putrid; as also may any parts of the placenta and membranes that have become separated from their attachments. Any blood that is present in the canal and all those tissues that have been compressed, torn, or bruised, and have thus been lowered in vitality, also afford favourable opportunities for the growth of germs. The toxins that result are absorbed by the freshly made tears, by the peritoneum in perforating lesions, or at the placental site. The last-mentioned avenue of infection is of extreme importance, not only because infection here is extremely likely to take place but also because of the great difficulty of treating it effectually when complicated by rupture. Even when the laceration of the vagina or lower uterine segment is properly treated and when peritonitis does not arise from this source it is quite possible for the infection of the uterine cavity to cause death from septicaemia or peritonitis. This possibility should, therefore, always be borne in mind and for this reason, as well as because the removal of the uterus affords better drainage of the peritoneal cavity in an infected case, the uterus should be removed when doubt exists as to the presence of infection.

The antiseptic conduct of labour appears in rupture to be useful, not only in preventing the later deaths from infection just referred to but also in diminishing the number of deaths that take place in a few hours from so-called shock and collapse. Rapid absorption of toxins by the peritoneum is probably in these conditions a very important factor in bringing about the fatal issue.

A CASE OF DERMOID TUMOUR OF THE MEDIASTINUM IN A CHILD AGED TWO YEARS.¹

By GEORGE CARPENTER, M.D. LOND.,
PHYSICIAN TO THE NORTH-EASTERN HOSPITAL FOR CHILDREN.

A CHILD, aged two years, was admitted into the North-Eastern Hospital for Children under my care on June 22nd, 1905. In the previous November she had had pneumonia. She was healthy until the preceding July, when she became languid, contracted a cough, and subsequently developed the attack of pneumonia. At this time her chest was noticed to be bulging. Two days before she was taken to the hospital it was noticed that she could not lie down, her respirations were accelerated, and she complained of pain in her side. When admitted into the hospital she was cyanosed; there was sucking in of the lower intercostal spaces, mostly on the left side. The respiration-rate was 60 to the minute, the pulse-rate was 136 to the minute, and the temperature was 99° F. Her ribs were beaded and the anterior fontanelle was patent. The right side of the chest in front was dull from apex to base; over the apex the breathing was tubular in character and elsewhere there was deficient entry of air, passing on to absent breath sounds at the extreme base. On the left side in front there were dullness and tubular breathing above and below the clavicle. On the right side behind the chest was absolutely dull; the breath sounds were bronchial above the spine of the scapula and elsewhere vesicular and diminished but nowhere absent, not even at the extreme base. Over the left apex there were dullness and tubular breathing. The heart sounds were best heard over the fifth rib some little distance outside the nipple line, and accompanying the first sound was a systolic bruit. The liver was displaced; its free edge was felt four fingers' breadth below the costal margin in the nipple line and there was a distinct depression between the liver and the costal margin.

Such were the physical signs gleaned at a hasty examination and aspiration was proceeded with at once in sequence to an exploratory puncture; 13½ ounces of pale straw-coloured opalescent fluid were withdrawn. After aspiration the chest became resonant behind. Air entered quite well all over, accompanied by fine rales. In front the chest remained absolutely dull with deficient entry of air. The patient was again explored just outside the right nipple and the syringe became charged with blood. There was some hæmoptysis, a few drops after the exploration, perhaps half a drachm of blood. The heart sounds were now heard loudest just outside the nipple and the organ had probably shifted half an inch or so towards the mid-line; the bruit had disappeared. The liver receded about a finger's breadth. On closer examination it was noticed that the front of the chest was much bulged; it was rounded in outline and occupied more of the right side than the left. An x ray examination was made and it was reported by Mr. Sale-Barker that the whole of the right lung was opaque to the rays. The breath sounds on the left side became vesicular. After the aspiration the child rapidly improved. When she left the hospital on July 3rd the chest was still dull in front on the right side and the cardiac impulse was in the fifth interspace.

On July 31st the child was brought to the out-patient department cyanosed and moribund. She was re-admitted into hospital and died shortly afterwards. At this time on a hurried examination it was found that the right chest was completely dull back and front and the free edge of the liver was four fingers' breadth below the costal margin in the nipple line. A post-mortem examination was made the same day. The left pleura was healthy as was also the right pleura. In front of the right lung was a mass of the size of a fist. On incising this from six to eight ounces of clear fluid escaped; inside the cyst was some cheesy material with a few hairs lying at the bottom. The rest of the tumour felt hard. The right lung was much compressed. Dr. Theodore Fisher, who examined the specimen, made the following report: "The tumour is roughly spherical. In addition to displacing the heart slightly to the left it projected into the

anterior mediastinum and reached to the inner surface of the left lung. The right lung was compressed into an airless strip which lay behind; the compressed lung did not occupy more than one-half of the space of the lung on the opposite side. On section the tumour is chiefly composed of a considerable number of cysts, the largest of which is the cyst which has been opened. Between the cysts running from above downwards is a partition composed of fat and fibrous tissue and containing a few calcareous masses. Most of the cysts contained a gelatinous material of a light brownish colour. In the large cyst which had been previously opened were sebaceous-looking material and short hairs."

Wellbeck-street, W.

ON THE UNIFORM LINEAL GROWTH OF THE HUMAN FŒTUS.

By R. CADWALADR ROBERTS, B.Sc. LOND.

It is well known that the human fœtus grows in length between the third month and full term at a nearly uniform rate, more especially from the fourth or fifth month onwards, and it is easy to find a rule for estimating the length—in inches or centimetres—of the fœtus for this interval. Thus, we have only to multiply the lunar month of gestation by five and we find the length in centimetres at the particular month.

Age.	Length.
5 months	25 centimetres.
6 "	30 "
7 "	35 "
8 "	40 "
9 "	45 "
10 "	50 "

This rule was given by Haase.¹ Also working in inches we find the corresponding length by multiplying the number of lunar months by two. This result is nearly exact, but if we work in calendar months the result will be about an inch short. Thus:—

Calendar month.	Same x 2.	Length.
5	10	8 inches.*
6	12	12 "
7	14	15 "
8	16	16½-17 "
9	18	21 "

* Galabin: Manual of Midwifery, p. 55.

Hence we have the general rule that the length of the fœtus is a "lineal function of the time" nearly—that is, its length is directly proportional to its age.

Now I may ask, "Does the fœtus grow at a uniform rate in the other two dimensions of space?" I shall try to answer this in two different ways, both indirectly.

1. The fœtus from the third month onwards does not change its shape *very much* as it increases in volume. This change of shape is caused by two factors—viz., (a) the slower rate of growth of the head and (b) the faster rate of growth of the limbs relative to the trunk, for in the earlier months the head is relatively bigger and the limbs smaller than in the later months. We shall see later that these two inequalities compensate one another, so that we can find a very simple rule for deducing the volume (or at any rate a value proportional to the volume) of the fœtus at any particular month. So the approximate adherence to its original shape points to the conclusion that the fœtus increases in breadth and depth at a uniform rate with the length and therefore with time.

2. The specific gravity of the fœtus from the third month onwards does not change much. I know of no experiments made to prove this but I do not think that it does vary much. When the denser parts of the fœtus are forming, such as centres of ossification and great growth of cartilage in the later months, this is also the time when most fat is put on, and this, of course, tends to compensate and keep the density of the fœtus constant. Hence the "mass," or what is usually called the "weight," of the fœtus is directly proportional to the volume of the fœtus at any period.

Now we have the weight of the fœtus at the end of every month given us in text-books. I take the figures below from

¹ The specimen was exhibited at the meeting of the Society for the Study of Disease in Children on Oct. 12th, 1905.

injected during the operation and after the woman was returned to bed a pint of saline solution was injected subcutaneously. The child was a female, 16½ inches long, and weighed three pounds; the placenta weighed 12 ounces. The external measurements of the pelvis were decidedly greater than the average, being 12, 12½, and 9½ inches respectively. 48 hours after the operation the forceps were removed, together with the gauze packing from the vagina and uterus but not from the peritoneum. In passing a small piece of gauze with very little pressure into the vagina the mucous membrane of the vulva was torn on the right side so that there was free bleeding, to control which two silk sutures were required. The abdominal binder was taken off on the sixth day after operation. The temperature remained normal until the evening of the fourth day, after which it rose every evening until the fourteenth day after operation; the highest point reached was 102° 2' F.; on the fourteenth night a stool was passed which was said to contain about two ounces of pus, and thereafter the temperature remained normal until the patient was sent home well on the twenty-seventh day after delivery. In another case, in some respects like this one, similar treatment was not successful, the patient dying from septic peritonitis on the eighth day after delivery.

CASE 3.—The patient, a primipara, aged 25 years, who had a moderately flattened pelvis, sustained a perforating rupture of the vagina in the course of a protracted labour with shoulder presentation. After long-continued efforts at version under anaesthesia the bipolar method succeeded very easily; when the trunk was delivered great difficulty was experienced with the arms and it was then discovered that rupture had occurred. On my arrival the head and arms were still in the uterus; when extraction of the child was completed the rupture was observed to be a large transverse ragged tear in the posterior vaginal fornix close to the cervical insertion; no bleeding was going on and the peritoneal cavity did not appear to have been fouled; a large iodoform gauze drain was passed into the lower part of the peritoneal cavity and the vagina was loosely plugged with the same material. On the following day the patient was removed to hospital; the packing was twice renewed at intervals of two days under chloroform anaesthesia; the patient died from septic peritonitis on the eighth day after delivery. A post-mortem examination was refused.

Sometimes rupture takes place when the cervix is still only slightly dilated and the foetus is still in the uterus. In such cases delivery is best effected by splitting up the anterior wall of the uterus so as to get complete access to the foetus. After delivery the uterus can be immediately extirpated through the vagina. This treatment was successfully employed in the following case where an incomplete rupture occurred during forcible dilatation of the cervix in a multipara whose tissues were friable owing to the development of a placenta prævia. Recovery followed upon the operation, which is now known as vaginal Cæsarean section.

CASE 4.—The patient, aged 38 years, had arrived at about the fifth month of her twelfth pregnancy, all the others having ended normally at term. While out driving very profuse hæmorrhage occurred. On returning home the patient sent for her usual attendant who found the cervix partially dilated and proceeded under chloroform to dilate still further with a view to empty the uterus; when two fingers were in the cervix the patient gave a sudden lurch and the hand was immediately withdrawn. On examining again after the administration of more chloroform a large rent was found in the posterior fornix of the vagina and I was immediately summoned. When I arrived I found there had been a moderate loss of blood; the patient was pale and restless; the firm, enlarged uterus was on the right of the middle line and extended as high as the umbilicus. The cervix was dilated and rigid, admitting two fingers; behind it a large irregular cavity which would have held the fist was filled with blood clot; the hæmorrhage had ceased. Having obtained the necessary assistance I proceeded after incising the vagina and pushing up the bladder to split the cervix and anterior wall of the uterus until a macerated male foetus of about the fifth month could be seized by the legs and extracted. The median incision was then continued as far as the fundus and the uterus gradually delivered. The organ was then completely divided into two and each half was removed after its corresponding broad ligament had been secured by three forceps. The peritoneal cavity was drained with a strip of iodoform gauze.

At the close of the operation the pulse was 90; the extremities were somewhat cold; reaction speedily ensued and the patient made an excellent recovery. Rupture had taken place through the posterior vaginal insertion and extended up into the lower half of the right broad ligament; the vaginal insertion on this side was intact, as was also the uppermost portion of the broad ligament. The placenta had been attached to the right side of the uterus and its border came down to the edge of the internal os; its uterine surface was covered with adherent black blood clot over nearly its whole extent. The wall of the cervix on the right side was exceedingly friable.

The danger of infection of the uterus, the difficulty of treating it should it arise, and the distinct risk of fresh rupture occurring in a subsequent pregnancy should decide us in a doubtful case not to hesitate to sacrifice the uterus in order to save the woman. When the uterus has already been emptied and there is certainty, or distinct probability, that infection has already occurred, the uterus should be removed and this may sometimes be done with success even when septic peritonitis has already begun as in the case now to be related.

CASE 5.—In this patient there had apparently been a transverse presentation due partly to placenta prævia and partly to the presence of a submucous fibroid. The second stage of labour had lasted for at least four days until the contraction ring was exceedingly well marked. When first seen, 24 hours after delivery, the patient was in an extremely grave condition, as septic peritonitis had fairly begun and a sloughing fibroid was present in the uterus. In my opinion it is undoubted that the performance of vaginal hysterectomy was the only chance of saving life. The patient, who was a septipara, aged 37 years, and whose last child was born three years before, was first seen 24 hours after the delivery of a dead seven months child. She was pale and anxious; the pulse was 130; the temperature was normal; there were frequent severe colicky abdominal pains and repeated vomiting and retching. The abdomen was markedly distended and tender; there was visible peristalsis of the intestines; and the hard, round, tender uterus was fixed in the lower abdomen extending half-way to the umbilicus. There was very foul vaginal discharge; the cervix was patulous; in the posterior wall of the cervical canal about an inch above the external os was a small ragged depression and in the posterior wall of the uterus near the fundus was a hard rounded lump which seemed to be nearly as large as the closed fist. On the fifth day before I first saw the patient labour pains were said to have begun; a large bag of membranes protruded into the vagina and was ruptured. On the next day there were two considerable losses of blood; two days later ergot was administered and a few hours later the patient was placed under chloroform, a portion of placenta which was present was removed, and then a foot was seized and the foetus was extracted, the remainder of the placenta and membranes being afterwards delivered by the hand inserted into the uterus. No vomiting occurred before delivery and there were no labour pains for the three days prior to the administration of the ergot. Two hours after I first saw the patient she was anaesthetised and a sloughing submucous fibroid was enucleated by the fingers. The ragged depression in the posterior wall of the cervix admitted two fingers into the peritoneal cavity; higher up at a distance of about three inches above the external os was a transverse prominent ridge—the contraction ring. It was decided to perform vaginal hysterectomy and this was done by splitting the uterus in the middle line anteriorly and delivering the organ; the broad ligaments were each secured by three forceps which were left on. After the removal of the uterus a considerable quantity of black blood clot which had a rather strong odour was swabbed out of the hollow of the promontory. A large drain of iodoform gauze was introduced into the peritoneal cavity. At the end of the operation the patient was collapsed and very pale and the pulse was 160. Within half an hour reaction set in and the patient afterwards made a most satisfactory recovery.

Birmingham.

HOSPITAL SUNDAY AT BRISTOL.—Jan 28th was observed in Bristol as Hospital Sunday. During the past eight years the sum of £12,748 has been raised by this fund and last year £2053 were realised.

neck were stripped downwards for about two inches from the edge of the incision. The flap was then pulled upwards and it was found possible to suture it to the periosteum of the lower jaw. Then the edges of the incision were sutured together just as they were before the cut was made, but the line of incision was now situated just above the lower edge of the jaw instead of being at the level of the hyoid. The wound was dressed with collodion and cyanide gauze and the sutures were removed on the sixth day when it was completely healed. Fig. 2 shows the condition a fortnight after the operation.

Remarks by Mr. W. H. BROWN.—So far as I know, this simple method of restoring the lower lip after complete removal has not yet been described. It may be said: Why make an incision only to re-close it? The answer to this is that the dissection needful to free the flaps causes much bleeding and it would be impossible to ligature with accuracy vessels so far away from the edge of the wound, and much oozing after a plastic operation nearly always means failure.

ELDER COTTAGE HOSPITAL, GOVAN.

A CASE OF HERNIA OF THE VERMIFORM APPENDIX, PROBABLY INFANTILE, AND AFFECTED BY SUPPURATIVE APPENDICITIS WHILE IN THE SCROTUM.

(Under the care of Mr. J. A. C. MACWEN.)

THE patient, a man, aged 25 years, was admitted into the Elder Cottage Hospital, Govan, in May, 1905, complaining of a swelling in the right scrotum which he first noticed a few days previously, his attention having been directed to the part by a sensation of something slowly giving way when lifting a heavy weight. On examination a firm rounded swelling of about the size of a walnut was found situated just above the testicle and connected with it. This swelling was opaque to transmitted light and was not markedly tender to pressure. The vas could not be satisfactorily isolated, as a thick cord ran up from the mass just described into the abdomen through the inguinal canal. There was no impulse on coughing. A large and rather prominent scar over the inguinal region and upper portion of the scrotum attracted attention and the patient explained that this was the scar left by an operation for rupture which he underwent when an infant. As the condition was causing the patient trouble and unfitting him for work operation was decided on.

Operation.—An incision as for the radical cure of hernia was made and the parts were exposed. The mass which had been felt on examination was found to consist of matted omentum, and when this was opened out the vermiform appendix was found within it. The appendix extended from the internal ring to the testicle; it was curled on itself toward the tip and was firmly adherent at this part to the upper portion of the testicle. This adhesion to the testicle was dense and avascular, necessitating cutting to effect a separation, and obviously was of long standing. The appendix having been freed from its adhesions to the testicle was next freed from some slight adhesions to the inguinal canal, and then on applying gentle traction and using the finger as a hook the lower end of the cæcum came into view. Appendectomy was then performed and the stump was umbilicated by a circular suture, after which the bowel was returned within the abdomen. Having removed the protruding portion of matted omentum the operation was completed by performing the final stage of the radical cure for hernia (Macwen's operation)—a mattress suture was passed through the conjoined tendon and its free ends were passed through Poupart's ligament, so that by tightening and tying the ends together the conjoined tendon was pulled down behind Poupart's ligament and thus obliterated the canal. The patient made an uninterrupted recovery, the wound healing aseptically under a single strip of gauze painted over with collodion and was allowed up six weeks after operation. He resumed work about a couple of months later and is now (January, 1906, seven months later) regularly at work without any recurrence of the hernia.

Remarks by Mr. MACWEN.—Judging from what was found at the operation it would appear that the appendix in this case had long occupied the inguinal canal and had as the result of some inflammatory process. The absence of any definable hernial sac also would be accounted for by an old inflammatory process. The recent sensation of something slowly giving way and the subsequent swelling I

attribute to the slipping down into the scrotum of a small portion of omentum.

Being interested in the condition found and having ascertained the ward in the Western Infirmary, Glasgow, in which the patient had been treated when an infant some 23 years previously, I turned up the old journals of that institution and found that he had been operated on for hernia when 20 months old. According to the history there given the patient had a swelling in the groin from the time he was ten months old. A truss was then worn until the week of admission to hospital, when it was discarded as the swelling became large and painful and descended into the scrotum. The swelling increased in size until on admission it was found to be pear-shaped, extending above to the inguinal canal, while the lower portion in the scrotum was hot, red, and painful. There was impulse on coughing but taxis was not successful. The scrotum was laid open when pus flowed out from the tunica vaginalis, after which the bowel was returned "with a slip and gurgle" and the pillars were brought together by a silver stitch which was removed later. Free drainage was provided and frequent lavage was performed.

From the description given in these old notes it appears probable that the patient had a hernia of the appendix from a very early age (which conclusion, as already mentioned, is strengthened by the condition found when operating recently). When 20 months old, however, a suppurative appendicitis occurred, with abscess formation in the scrotum. This abscess was opened by the incision into the tunica vaginalis; the bowel was returned to the abdomen, while the appendix, left to drain through the open wound, gradually healed up, and contracted the adhesion to the testicle mentioned in the description of the recent operation. This same suppurative process, occurring 23 years previously, would account for the absence of any definite hernial sac.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 26th, Mr. H. H. CLUTTON, the President, being in the chair.

Dr. H. D. ROLLESTON exhibited a case of Multiple Lipomata (Adeno-lipomatosis). The patient was a man, aged 43 years, and he had noticed the fatty tumours in the neck for about four years. The tumours were present on the neck, upper arms, and trunk, being for the most part symmetrically situated; there were none on the legs or forearms. Pain did not precede their appearance, as was the case in adiposis dolorosa. No enlarged glands were found and there were no scars from tuberculous glands. There was no loss of muscular power and the knee-jerks were normal. He had had painful swellings of the joints which did not yield to salicylates or to colchicum and he had had several attacks of peliosis rheumatica.—The PRESIDENT remarked on the importance from a surgical point of view of the question whether these fatty tumours were encapsulated or diffuse.—Mr. W. G. SPENCER discussed the pathology and, drawing attention to the local vascularity and the concurrent local fat formation which occurred in these tumours, asked which was the primary or causal agent of these two conditions.—Dr. ROLLESTON referred to the resemblance of this disease in men to adiposis dolorosa in women. The tumours were encapsulated at the outset and afterwards diffuse. The pathology was obscure, but the tendency to hemorrhage suggested vascular degeneration; both this and the resulting adiposis might be the result of alcohol.

Mr. J. R. LUNN exhibited a case of General Paralysis of the Insane (I) in a boy, aged 16 years. The patient was one of eight children and the mother stated that he was always untrustworthy with money and prone to steal. He had had three fits of unconsciousness in 1905, since which time he had become duller in intellect and had had occasional twitchings of the left arm and leg. When walking the left arm was flexed and he dragged his left leg, and there was some weakness of the muscles elevating the mouth. The speech was affected but there were no tremors. The left pupil was larger than the right. There was no history of syphilis.

Galabin. So if we can show that the weight—and consequently the volume—of the fœtus is directly proportional to the cube of the length it must increase in all three directions of space at a nearly uniform rate. But as the length of the fœtus is proportional to the month of gestation, the volume will be proportional to the cube of the age of the fœtus, hence the weight will be proportional to the cube of the age. We shall now see if this latter is so: that is, we shall compare the weight with the "cube of the age." Call the months from the third onwards m . We shall see that m^3 is proportional to the weight of the fœtus at all times from the third month onwards, provided the density is constant and the fœtus increases at a uniform rate in all directions.

Month of gestation or m .	Value of m^3 .	Value of $m^3/104$	Weight of fœtus
3	27	0.26	3 ounces.
4	64	0.61	7½ "
5	125	1.20	1 pound.
6	216	2.1	2 to 2.5 pounds.
7	343	3.3	3 " 4 "
8	512	4.9	4½ " 5 "
9	729	7.0	7 "

So we see that the cube of the age of the fœtus is very nearly proportional to the weight and that the latter can be deduced by taking the cube of the corresponding month and dividing it by a figure—104—which gives the answer in pounds, correct to within one ounce at the third month, and absolutely correct at full term.

This rule holds good from the third month onwards, that is during the period that the placenta is fully formed. It does not hold previously to the third month. So although there are certain irregularities in the rate of growth in the three dimensions and also some variation in the density at different times, yet these to a large extent cut each other out and we are left with a very simple rule for finding the weight at any particular month.

London Hospital, E

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed et Causa Morb.*, lib. iv., Proœmium.

GENERAL INFIRMARY, LEEDS.

A CASE OF "COUNTRYMAN'S CANCER," DESCRIBING A NOVEL METHOD OF RESTORATION OF THE LOWER LIP.

(Under the care of Mr. W. H. BROWN, M.Sc. Lond., F.R.C.S. Irel.).

FOR the notes of the case we are indebted to Mr. Harold Leach, house surgeon.

The patient, a man, aged 68 years, was admitted for a large growth situated on the lower lip, involving the whole of the red margin and extending downwards about one and a quarter inches. The edges of the growth were hard and infiltrated. There was no doubt that the condition was epitheliomatous, despite the fact that though the history was a long one no glands could be felt either under the symphysis or behind the angle of the jaw (*vide* Fig. 1). As history it was stated that the growth started seven years ago as a small ulcer on the red border of the lip. The patient had never consulted a medical man before admission.

Operation.—An incision was made round the growth well clear of the edge and the mass was removed, including the whole of the red border and the tissue of the lower lip as far as the margin of the jaw. The growth was found not to have involved the periosteum. A transverse incision about six inches long was made through the tissues

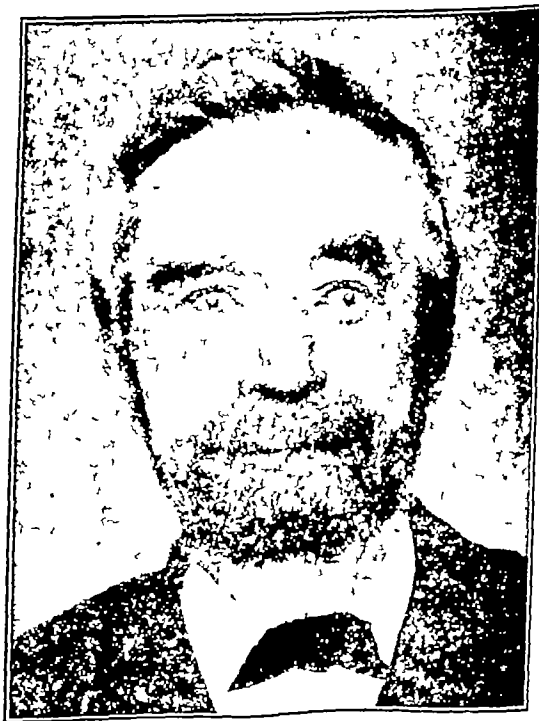
of the neck just above the level of the hyoid bone and this flap was freed. This flap was drawn up into the gap formed by the removal of the growth to form another lip and was sutured at either angle of the mouth; then the tissues of the

FIG. 1.



Before operation.

FIG 2



A fortnight after operation, the patient having allowed his beard to grow

origin in a female child, aged 13 months. The left brachial and radial arteries were dilated and tortuous and the palm of the hand was occupied by a pulsating vascular tumour. The third part of the left subclavian artery had been ligatured in February, 1905, but without success. 2. A case of Cavernous Nævus of the Tongue, also of congenital origin, in a girl, aged 11 years. In July, 1904, the right lingual artery and veins were ligatured and the tumour apparently completely dissected out, but the present condition showed a gradually increasing recurrence.

Dr. BEEVOR exhibited a case of Perforating Ulcers of the Feet and joint lesions associated with only slight sensory changes, probably due to syringomyelia. The patient was a man, aged 38 years. The symptoms referred to had commenced about three years before. Three pieces of dead bone had separated on various occasions, one of which was the distal end of the terminal phalanx of the big toe. The question of the case being very early locomotor ataxy was considered, but the knee-jerks were increased and there were no other symptoms of that disease. Extraordinary symptoms might be met with in syringomyelia.

ABERDEEN UNIVERSITY MEDICAL SOCIETY.—A meeting of this society was held on Jan. 13th, Professor J. T. Cash being in the chair.—Sir Patrick Manson delivered an address on Some Recent Researches in Tropical Pathology. Regarding yellow fever, he said that Dr Reed of the United States Commission had shown that the bacillus icteroides of Sanarelli had no causal relation to the disease. Dr. Reed was, however, struck by the fact that while the incubation period of the fever was three days that of the epidemic was 15 days. Following up this clue and finding that fomites were ineffectual in transmitting the disease he fixed on the mosquito, *Stegomyia fasciata*, as the culprit. Mosquitoes fed on a patient during the first three days of the fever transmitted the disease after a lapse of 12 days; those fed on the fourth, fifth, or subsequent days did not transmit it. His discovery had led to the stamping out of yellow fever in Havana. Yellow fever might easily become an Asiatic disease once the Panama Canal was completed if the United States Government did not take steps to prevent its spreading. The result of Dr. Reed's discovery had been of inestimable benefit to mankind and to commerce. Sir Patrick Manson then referred to *ankylostoma duodenale*, an entozoon which caused a severe anemia that was very common in many countries. It did not reach the intestine by means of drinking water, as had been supposed. By experimenting on dogs, which suffered from a similar *ankylostoma*, and by observation of the papulo-pustular skin eruption of Assam coolies (commonly called "coolie itch"), it had been shown that the parasite entered by the skin. The ova were passed in the faeces and getting into suitable soil were thus conveyed to the skin, whence the blood carried them to the lungs. Thence they climbed into the trachea and being swallowed reached the oesophagus and the intestine. Isolated cases occurred in this country among people who had lived abroad. He referred to such a case which had been given up as a hopeless case of pernicious anemia but examination of the blood revealed a marked eosinophilia (40 per cent.)—an invariable indication of the presence of an animal parasite. In a Cornish mine which was deep enough to reproduce the tropical conditions of heat and moisture there had been an outbreak of anemia due to this parasite. The recognition of the disease was the chief thing; its treatment was very simple and effective, a few doses of thymol and eucalyptus oil serving to get rid of at least the bulk of the parasites. Sir Patrick Manson then spoke upon trypanosomal diseases. He said that Dr. Dutton had seen a trypanosoma in the blood of a white man in West Africa who was suffering from an obscure fever and he subsequently found it in the blood of natives. In African sleeping sickness the blood also contained a trypanosoma; there was a period during which the brain and spinal cord were unaffected; when they were involved the distinctive lesion was a meningo-encephalitis characterised by a dense perivascular infiltration by leucocytes. How this arose was still unknown. Bruce, in studying nagana of cattle, had found that a species of the tsetse fly transmitted the disease. Search among the tsetse flies of the districts affected by sleeping sickness had led to the discovery that the fly which infected human beings was the glossina palpalis. "Leishman bodies," which resembled a curled-up trypanosoma without a flagellum, were first discovered in the blood of the rat and

then in the spleen of a man the subject of a peculiar fever. In many cases originally put down to malaria they occurred in the spleen, liver, and bone marrow so profusely as even to exceed in weight the weight of the viscera involved. Oriental sore was a localised skin lesion associated with the occurrence of Leishman bodies, but it healed in a few months, and it was a peculiar fact that the subjects of oriental sore were immune from the visceral disease. Regarding the guinea-worm, he said that it had been recently shown that the cyclops, its intermediate host, gained access to the system by drinking-water and was killed by the gastric juice, which at the same time stimulated the contained guinea-worms to activity. Sir Patrick Manson also referred to the spirochæte of relapsing fever and to the oval bodies like coccidia discovered by Dr. John Catto of Aberdeen and now considered to be the ova of a new species of bilharzia.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

—A meeting of this society was held on Jan. 19th, Dr. J. Porter Parkinson being in the chair.—Mr. Arthur Edmunds showed a case of Cutaneous Pigmentation in which there was on the buttocks and back a curious bluish mottling similar to the pigmentation which occurs in a large number of Asiatic races of mixed descent. The pigmentation resembled that shown in a Japanese baby recently exhibited at the society by Dr. G. A. Sutherland. Some held that this pigmentation was an evidence of a negroid ancestor, while others, especially the Japanese, held that it was merely a racial characteristic. In the present instance there was no history of any negroid ancestry.—Dr. George Carpenter showed a case of Sclerema Neonatorum occurring in a girl aged eight weeks. The infant was born in a state of asphyxia but recovered with artificial respiration. There was a brawny induration of a purplish purple hue over the whole of the back and the back of the neck, also over the buttocks and upper part of the thighs posteriorly; also there were two small patches over the occipital region of the scalp.—Dr. Parkinson showed microscopical specimens from a case of Sclerema Neonatorum taken from an eight months' infant who died when ten days old. The sections of the skin showed chiefly thinning of the epidermis with considerable thickening of the cutis vera apparently due to increase of fibrous tissue, but this seemed insufficient to account for the sclerema which he suggested was due to a chemical rather than to a structural change.—Dr. Leonard G. Guthrie showed a case of Lipomatosis. The case was that of a child who was very fat although neither the weight nor the height was abnormal. The discrepancy between the weight and the appearance was probably due to lightness of the skeleton.—Dr. O. O. Hawthorne showed (1) two children suffering from Mental Defect and Optic Nerve Atrophy and (2) a boy aged seven years who had almost completely recovered from an Infantile Hemiplegia which followed a convulsive seizure at two years of age.—Dr. Carpenter and Mr. J. P. Lockhart Mummery showed a case of Hemihypertrophy in a child aged two and a half years, the left side being larger than the right. The face and tongue on the affected side were appreciably larger and the head was half an inch broader. The left side of the trunk was one inch larger than the right, the left arm was half an inch longer, and the left leg was one inch longer and correspondingly enlarged. The bones on the hypertrophied side were also larger.—Dr. Carpenter and Dr. Theodore Fisher communicated notes of a case of Fatal Dilatation of the Heart occurring in a boy aged eight years. The necropsy showed that there was no adhesion of the pericardium, neither was there any valvular disease. Apparently the boy had suffered from symptoms indicating cardiac failure for about a year, but the only history of rheumatism related to an attack four months before admission to hospital. After death the heart was found to be not only dilated but hypertrophied. It weighed ten and a half ounces. Microscopically there was considerable fatty degeneration of the cardiac muscle but this probably was a comparatively recent pathological change.—Mr. Edmunds showed a case in which a Congenital Tumour of the Sacrum had been successfully removed.—Dr. J. G. Emanuel showed an infant with Congenital Absence of the Epidermis of the Hands, Legs, and Feet. In addition, over the temples, the bridge of the nose, and the middle of the lumbar region there were irregular-shaped areas in which a similar congenital deficiency in the formation of the epidermis existed. The parts affected were smooth, free from hair, sharply defined

¹ THE LANCET, Dec. 2nd, 1935, p. 1621.

complete enucleation of such tumours and cited some cases so treated from the literature. The proceeding was certainly attended with considerably more risk, and incision and drainage appeared the safer method though it involved tedious convalescence.—Mr. Mole thought that it was running unnecessary risk to endeavour to excise these cysts from the liver, incision and drainage usually being followed by a satisfactory result.—Dr. J. R. Charles read a paper on Fright in its Relation to Disease. After having described the physiological effects of fright, the analogies between fright and cold as exciting factors in disease were mentioned. Stress was laid on the importance of the avoidance of fright in certain conditions, specially during childhood. Its connexion with such diseases as chorea, hysteria, paralysis agitans, the paroxysmal neuroses, Graves's disease, and the infective and other diseases was discussed. Numerous illustrative cases were quoted.—Dr. J. A. Nixon, Dr. J. O. Symes, Dr. W. S. V. Stock, Dr. Williams, Dr. Shingleton Smith, and Dr. Harrison related cases bearing on the paper.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 16th, Mr. William Handcock, the President, being in the chair.—Dr. H. J. Campbell showed a case of Hereditary Ataxy of the Cerebellar Type. The patient was a man, aged 41 years, in whom the symptoms had developed during the last six months. The eye symptoms were not well marked. There was general ataxy and the knee-jerks were increased. There was no history of heredity, but on the whole Dr. Campbell thought that the case fitted in better with hereditary cerebellar ataxy than with any other disease.—Mr. J. B. Hall read a paper on some Renal Cases Illustrating the Value of the Urinary Segregator as a Means of Diagnosis. He said that the want of some means whereby the excretion from each kidney could be separately collected and examined was recognised many years ago and such a want was for a considerable time a great hindrance to the development of renal surgery. Even so recently as the year 1904 a surgeon of repute told Mr. Hall that he had a few days before excised the wrong kidney with a fatal result. A correct estimate of the condition of both organs was therefore of enormous importance in renal operations. Cystoscopy and catheterisation of the ureters were hardly available for general use, as they required very highly specialised skill. During the past three years, however, an instrument known as the urinary segregator had been perfected and its use had been attended with the greatest success. The fundamental idea of the two types of this instrument at present in use was the same—namely, the formation of two separate channels along the floor of the bladder through which the urine from each ureter could flow and be separately collected by means of a double catheter. This partitioning of the bladder floor into two separate channels was effected in one of two ways. In the American instrument known as Harris's segregator a lever was introduced into the rectum or vagina and by its pressure on the bladder floor a median ridge was raised along the trigone which effectually divided the bladder into a right and a left compartment, through which the urine ran from the respective ureters. In the French type of instrument the principle was different. The instrument was curved in such a way as to fit snugly along the floor of the bladder when it had been introduced. By turning a screw in the handle an indiarubber curtain was made to rise up and bridge across the concavity of the curve of the instrument, thus forming a partition which divided the bladder into two separate halves. Before using the instrument the bladder must be washed out in order to obtain specimens of urine uncontaminated with any mixed sample present in the bladder at the time of examination. In many cases, however, such information as was required might be obtained without this preliminary. Mr. Hall then read notes of six cases in which the instrument had been of the greatest benefit. He had always found it thoroughly trustworthy; he questioned whether such perfect separation could be obtained as absolutely to exclude minute contamination of urinary specimens obtained from each kidney but this had little, if any, practical significance.—Dr. W. E. Heilborn read notes of a case of Intestinal Obstruction caused by a Gall-stone with spontaneous recovery. The patient was a woman, aged 64 years, with no history of any previous attacks of gall-stone colic or jaundice. When first seen there had been absolute obstruction for four days, vomiting, dry brown tongue, a pulse-rate

of 120, and a distended abdomen. Operation was refused. After four enemata she passed a gall-stone of the size of a large pigeon's egg. Recovery was rapid and complete.

HARVEIAN SOCIETY.—A clinical meeting of this society was held on Jan. 25th.—Dr. Alexander Morison showed a case of Endocarditis in a Child associated with Chorea.—Dr. L. G. Guthrie showed a case of Gumma Cerebri. The patient, a man, aged 29 years, was admitted to hospital on Oct. 24th, 1905, with right-sided hemi-paresis and double optic neuritis. Seven years previously he contracted syphilis, for which he was under treatment for three months. There were no obvious secondary symptoms but his health had never been good since. He complained of "general deterioration, mental and physical." 15 months previously he noticed gradual weakness of the right arm and leg which increased until he had to give up employment owing to inability to write or to hold his pen properly. There had been slight headaches at times but no vomiting. After admission the optic neuritis and contraction of the visual fields increased. On Nov. 3rd a slight epileptiform seizure occurred with general convulsions and loss of consciousness but no focal commencement; its duration was about ten minutes. On the 8th he had two more attacks in which he became dazed and stupid but without loss of consciousness. He had had no fits before or since. He was treated by iodides which were pushed, until by mid-December he was taking 50 grains of mixed iodides thrice daily. The swelling of the left disc then began to subside, that on the right remaining *in statu quo*. He had slight iodism, soreness of the eyelids, and a few spots. The iodides were then gradually reduced to 24 grains of mixed salts thrice daily. The patient had improved in general health and had gained weight. The hand movements had become less ataxic under treatment by exercises. He could now write fairly well though slowly. The gait was less spastic. The diagnosis was gumma, probably supracortical, in the mid-area of the left cerebral hemisphere.—Dr. Squire showed a case of Leontiasis Ossea in a woman, aged 29 years. There had been proptosis and deformity of the forehead from birth. Blindness of the right eye was first noticed at the age of nine years. The forehead was large and there was a marked bony protuberance at the site of the anterior fontanelle. The nasal bones were thickened and the septum was deflected.—Dr. Guthrie suggested that the malformation was a congenital deformity due to premature synostosis of certain cranial sutures rather than one caused by leontiasis ossea.—Dr. E. Cantley agreed with Dr. Guthrie that the case was one of "tower shaped" skull due to congenital malformation.—Other cases were shown by Mr. T. Crisp English, Mr. E. Laming Evans, and Dr. J. F. H. Broadbent.

A NEW ASYLUM FOR IDIOTS.—At the meeting of the Gloucester city council held on Jan. 24th it was decided to unite with the Gloucestershire county council and other local authorities in leasing and adapting Sandwell Hall, Birmingham, as an asylum for idiot and imbecile children, the city and county together to acquire 20 beds.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND.—The following is the pass list of the examinations held in January:—Of 14 candidates who entered for the intermediate examination, ten passed: A. P. Davson, F. W. Foreman, W. Garsed, T. R. Hodgson, B.A. Cantab., T. J. Kirkland, A. Lathwood, B.Sc. Lond., B. D. W. Luff, J. F. Reid, H. Stanley, B.Sc. Lond., and F. Tattersfield. In the final examination for the Associateship (A.I.C.), of five examined in the branch of mineral chemistry, two passed: E. R. Ballock, Assoc. R.O.Sc. Lond., and T. F. Cowle; of four in metallurgical chemistry, two passed: H. J. B. Rawlins, B.Sc. Lond., and Thomas Stenhouse, B.Sc. Lond., Assoc. R.O.Sc. Lond., A.R.S.M.; of four in organic chemistry, three passed: W. P. Hayworth, F. H. G. Horsman, B.Sc. Lond., and D. Spence, Ph.D. Jena; and of 112 who entered in the branch of the analysis of food and drugs and of water, including an examination in therapeutics, pharmacology, and microscopy, the following nine passed: J. T. Cart, B.Sc. Lond., C. G. Gates, B.Sc. Lond., A. G. Holborow, Miss E. S. Hooper, B.Sc. Lond., S. J. Lewis, B.Sc. Lond., A. J. C. Lickorish, S. G. Liveredge, Miss E. A. Macadam, and F. E. Thompson, Assoc. R.O.Sc. Lond.

from the neighbouring healthy skin, and transparent, so that the delicate underlying blood-vessels were clearly visible. The infant was born dead at full term. Microscopical examination of sections showed that the defect consisted of a complete arrest of development of all layers of the epidermis, including its associated glands and hairs. The cutis vera was unaffected except, of course, in so far as it lacked hair follicles and sweat and sebaceous glands.

CORK MEDICAL AND SURGICAL SOCIETY.—A meeting of this society was held on Jan. 24th, Dr. C. Y. Pearson being in the chair.—Dr. W. E. A. Cummins showed a Cystic Tumour removed from a married woman two months after the birth of her second child. She had noticed it at the age of 14 years; it gradually increased and when she was admitted to hospital it was found to extend from the right iliac region to the under surface of the liver and well to the left side of the middle line. He diagnosed a cyst of the broad ligament on the right side and opened the abdomen by a median incision, finding transverse vessels, evidently renal, running into the tumour. These he ligatured and had no trouble in removing the growth, which was intimately united to the kidney. The latter was also ablated. He packed the huge cavity with gauze and the patient made an uneventful recovery.—Dr. A. E. Moore reported on the specimen, which he considered due to an error of development—namely, to persistence of a portion of the Wolffian body. In this case the capsule was split to inclose the kidney. He demonstrated the normal ureter, thus excluding the existence of hydronephrosis.—Dr. Pearson said that it was a unique case and agreed with Dr. Moore's theory of the origin of the tumour; he questioned the necessity for abating the kidney but thought that he would have done the same in like circumstances.—Dr. Pearson showed a specimen of Tuberculous Kidney and Ureter removed from a woman with a history of pyuria. The cystoscope showed no cystitis. Luys' segregator was used and the healthy urine was found to show a daily excretion of 300 grains of urea, an amount which he considered satisfactory. In operating he made the usual "Kelly" incision. He found considerable enlargement of the kidney with evidence of much perinephritis and great thickening of the ureter, which latter he clamped and ligatured as low down as possible. The renal vessels he clamped, leaving the forceps *in situ* for a couple of days. Post-operative vomiting, as usual in these cases, was very troublesome. He thought that the invasion of the kidney was primary in this case.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF SURGERY.—A meeting of this section was held on Jan. 12th, Sir Arthur O'Hance, the President, being in the chair.—Mr. R. Charles B. Maunsell read a paper entitled "Remarks on Gastro-enterostomy, with description of a New Clamp." He advocated operation in gastropexia and atonic gastritis in addition to the more commonly recognised indications. He considered that there should be no fixed rule for the site or form of incision in the abdominal wall or for the site of junction of the viscera, as the first would depend upon the amount of ptosis present, often lying partly below the level of the umbilicus on the left side, the junction of the viscera being made near the pyloric antrum or at the most dependent portion of the stomach, according to the amount of muscular power present in the stomach walls. A new form of clamp was described and shown; it was made somewhat on the principles of Carwardine's intestinal clamp and held the parts neatly in position during the operation.—The President expressed himself in favour of clamps and recognised the advantages of those designed by Mr. Maunsell.—Mr. A. J. M. Blayney said that he was not in favour of clamps as he considered that their use increased the risk of post-operative hæmorrhage. He had not known of any case in which dispensing with clamps had led to any untoward result through escape of stomach contents or prolongation of the operation.—Mr. G. Jameson Johnston said that he was in favour of clamps and had not noted hæmorrhage in any of his cases.—Mr. William Taylor read a paper on Partial Gastrectomy for Pyloric Tumour. The patient, a woman aged 60 years, was exhibited in perfect health, free from stomach trouble of any description, and able to eat anything and everything without the slightest discomfort. The history dated back for three years, during two and three-quarter years of which she complained of ill-defined stomach trouble, to which she applied the term

"weakness." During the last three months of this period she was never free from pain but food greatly aggravated it. At times it was so severe as to compel her to press her stomach across the back of a chair or the edge of a table; at other times she rolled upon the floor in agony. A tumour afterwards formed which increased very rapidly in size and it was on account of this tumour and the severe pain and vomiting that she sought admission to hospital. On examination the tumour was found to be situated a little above, and to the right of, the umbilicus; it was hard, nodular, and firmly fixed to the anterior abdominal wall. There was no tenderness. The stomach was moderately dilated. The patient herself was greatly emaciated. Examination of the gastric juice showed a complete absence of free hydrochloric acid. The diagnosis of malignant disease was made. Exploratory laparotomy was performed, when it was discovered that by excising the portion of the abdominal wall to which the tumour was adherent the growth could easily be brought outside. This was accordingly done, and as the tumour presented all the naked-eye appearances of malignancy a partial gastrectomy was performed. The cut ends of the stomach were sewn up with two rows of silk sutures. The duodenum was freed by dividing the peritoneum over the right kidney and fixed by two rows of suture into the opening made into the posterior wall of the stomach, about one inch beyond the line of section. The entire operation occupied exactly 70 minutes and the shock was very slight. Recovery was rapid and uninterrupted and the patient left for the convalescent home on the twenty-third day after the operation. Examination of the gastric juice on that day (Jan. 12th), seven months after the operation, showed that there was not a trace of free hydrochloric acid, or, indeed, of any other free acid to be found. The pathological report described the tumour as apparently a mass of inflammatory material deposited around an old-standing ulcer.

BRISTOL MEDICO CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 10th, Mr. John Dacre being in the chair.—Mr. Harold F. Mole gave a demonstration on the anatomy and surgical anatomy of the temporal bone illustrated by a large number of lantern slides, stereograms, and specimens. The latter consisted of preparations of the bone and metal corrosion casts of the same. Great stress was laid on the importance of surgeons operating on the ear having an accurate knowledge of important structures in relation with it and the specimens were specially prepared to show these relationships. One series of bones showed the various steps in the complete mastoid operation; another series, after the radical mastoid operation had been performed, were sectioned in various planes to show the relation of the facial canal to the operation area; a third were sectioned to show the relation of the lateral sinus to the antrum; another to show the depth of the antrum from the surface and the value of Henle's spine and the suprasternal triangle as a guide to the antrum, &c. The corrosion casts showed the intimate connexion of the tympanic cavity with the cells of the mastoid process and those outside it and above the external auditory meatus. Some of them showed a mass of cells at the apex of the petrous bone not usually described in text-books of anatomy.—Dr. P. Watson Williams and Dr. J. Lacy Firth congratulated Mr. Mole on the preparations.—Dr. Watson Williams read a paper entitled "Why Defective Nasal Respiration Impedes Growth and Development," emphasising the view that defective nasal breathing was not always due to, or in direct proportion to, the degree of nasal obstruction. Normal nasal breathing stimulated the bulbular respiratory centre and the abrogation of this physiological stimulation was one important factor resulting in deficient respiratory exchanges and consequent defective tissue metabolism. Hence the mechanical obstruction to respiration was by no means the only indication for appropriate treatment.—Dr. R. Shingleton Smith, Dr. E. O. Williams, Dr. A. J. Harrison, and Mr. Mole took part in a discussion on the paper, agreeing with Dr. Watson Williams on the importance of removing nasal obstructions in childhood and that the nasal obstruction was not always due to adenoids.—Dr. H. G. Kyle read notes of a case of Hydatid Cyst of the Liver occurring in a woman, aged 25 years. The tumour had attained very large dimensions, displacing the heart upwards, so that the maximum impulse was in the third left space, the lower limit of the tumour being about on the level of the umbilicus. It grew in the left lobe of the liver. It was treated by incision, removal of the hydatid membrane, and drainage. The patient made a good recovery. Dr. Kyle discussed the propriety of attempting

Information will be derived from a study of its contents. Some of the chapters, however, are rather too curtailed, as, for instance, the one dealing with mitral insufficiency. But, as a rule, the subject matter is dealt with in a thoroughly practical and praiseworthy manner.

The National Standard Dispensatory. By HOBART AMORY HARE, B.Sc., M.D.; CHARLES CASPARI, jun., Ph.G., Ph.D.; HENRY H. RUSBY, M.D.; JOSEPH F. GEISLER, Ph.C.; EDWARD KREMERS, Ph.D.; and DANIEL BASE, Ph.D. London: J. and A. Churchill. 1905. Pp. 1860. Price 31s. 6d. net.

THIS colossal compilation might be well described as an encyclopædia of modern pharmacology and pharmacy. It contains between its covers 1860 closely printed pages and the size of the volume is somewhat larger than the new Medical Directory. It deals with the natural history, chemistry, pharmacy, actions, and uses of medicines, including those recognised in the pharmacopœias of the United States, Great Britain, and Germany, and besides there are numerous references to other pharmacopœias. Needless to state, the subject matter is in accordance with the eighth decennial revision of the United States Pharmacopœia of 1905. If it were otherwise its *raison d'être* would be gone. The work, in fact, which has been printed in America, is designed to succeed the National Dispensatory of Stillé and Maisch, which for years was recognised as a standard work of reference on pharmacology. 'The merest glance through the pages shows the earnestness and care with which its compilers have done their work.' No pains have been spared to bring the work into accord with modern knowledge, with the result that the book is certain to secure a place as a valuable source of reference on pharmaceutical matters. The considerable advances which have been made during recent years have entailed, as will be easily understood, a considerable amount of work in order to render the subject-matter of value to the modern reader and this work has been increased by the attention which has been given to remedies which are not universally known and which, in fact, have gained, so to speak, a local reputation—remedies which for this reason will not be found mentioned in general contributions on the subject.

One excellent feature of the work is the thoroughness with which what may be described as the assay section of pharmacy has been done. We regard this feature as of particular value because on these questions there is necessarily very little practical information in the official compilations that can guide the pharmacist. Thus references to the properties and tests of the drugs and chemicals described constitute, in our opinion, a very valuable source of reference in the work, especially as the facts concerned are drawn from the chief foreign pharmacopœias. The sections on alkaloids and volatile oils are most thoroughly treated; the latter section, perhaps, receives the greater share of space and in it is included a valuable table of constituents and physical constants. Radium takes its place in the pharmacological list and the account is excellent while not lengthy, the description of the events which led to its discovery being most intelligently and tersely written. While this is so we may express some surprise at not finding in the article on mineral waters any reference to the radio-active property which is now known to characterise so many of them and from which it would appear that they derive some of their therapeutic effects. We read, for instance, that the waters of most of the thermal springs do not possess any therapeutic properties apart from their heat. This statement, we imagine, must now be modified in view of the radio-active property which marks almost all thermal waters and in this connexion may be mentioned the waters of Bath and Buxton.

Considering the enormous amount of exact work which

has been done in this country owing to the epidemic of poisoning by arsenical beer a few years ago, we should have thought that the article dealing with the detection of arsenic would have been in a closer line with these modern investigations than it is. The old classical tests for arsenic are known to present certain fallacies and it is of the utmost importance that they should be observed in toxicological practice. Owing to the special attention which was forced upon chemists and others in this country we doubt whether the subject is anywhere so far advanced as it is at the present time in England. In the article on amyl alcohol it is stated that small amounts of this alcohol are nearly always present in ethyl alcohol and in all compounds containing the latter. Later it is remarked that this is especially true in regard to freshly distilled or raw preparations. As a matter of fact, amyl alcohol is not eliminated in potable spirits by age at all events, as a higher proportion is invariably found in old whisky or brandy than in the freshly distilled product. Whisky, it is remarked, is more easily obtained unadulterated than is brandy, and for this reason, the writer states, is preferred for most medicinal purposes. Therapeutically, we hold, the two cannot be regarded as interchangeable, assuming that they are genuine. The disagreeable odour of raw whisky is stated to be due to a small quantity of amylic alcohol, which on keeping is changed into an ether and perhaps partly into valerianic acid. This can hardly be the case in view of what we have already said.

The appendix will be a useful guide to the pharmacist who wishes to turn analysis to account in the examination of drugs, while the article on the physiological testing of drugs, including suprarenal extract, will be read with profit because of its practical character. The index is admirably drawn up and comprehensive and is divided into a general index of over 100 pages and a therapeutic index of 20 pages. The printing of the words fluid ounce, fluid drachm, and fluid extract as fluidounce, fluidrachm, and fluidextract is open to objection.

To say that the work is practically a complete storehouse of modern pharmacological and pharmaceutical knowledge is no exaggeration and the editors may be congratulated on the success with which they have accomplished a very great task. The names of the distinguished American professors of therapeutics, materia medica, pharmacy, botany, and chemistry (in its various departments) on the title-page are calculated to assure the reader of the trustworthy character of the mass of information contained in the volume.

Das Biologische Verfahren zur Erkennung und Unterscheidung von Menschen- und Tierblut. (The Biological Method by which the Blood of Man and of Beasts may be Recognised and Distinguished.) By Professor UHLENHUTH. Jena: Gustav Fischer. 1905. Pp. 152. Price 3 marks.

This little volume contains a collection of short articles published at various times in the medical journals by Professor Uhlenhuth on the biological tests for blood. The principle on which these tests are founded is now generally accepted—namely, that the serum from an animal which has been injected by way of the peritoneum with any given organic fluid will, if mixed in small quantity with a dilute solution of the fluid used for the injection, produce a more or less definite precipitate. For instance, if human defibrinated blood be injected into the peritoneal cavity of a rabbit the serum obtained from the rabbit's blood, when mixed with a clear solution of the blood of man, will produce a precipitate and agglutinate the red blood corpuscles if present. A similar reaction will not follow if such serum be added to a solution of the blood of any other animal. Professor Uhlenhuth speaks in the highest praise of the value of this test in medico-legal practice and maintains that it may be

Reviews and Notices of Books.

The Medical Epitome Series. Edited by V. O. PEDERSEN, A.M., M.D., Instructor in Surgery at the New York Polyclinic Medical School and Hospital; Genito-Urinary Surgeon to the Out-Patient Department of the New York Hospital; Physician-in-Charge of St. Chrysostom's Dispensary, &c. 16 vols. London: Hodder and Stoughton. Price 4s. each.

Messrs. Hodder and Stoughton have issued a series of 16 volumes known as "The Medical Epitome Series" under the editorship of Dr. V. O. Pedersen. The volumes deal with most of the departments of medical teaching.

In arranging for the editorship of the series the publishers established the following condition—namely, that the series, as a whole, should embrace the entire realm of medicine; that the individual volumes should authoritatively cover their respective subjects in all essentials; and that the maximum amount of information, in letterpress and engraving, should be given for a minimum price. The volumes are well edited and are very creditable to the publishers as books. When we turn to the subject-matter in each volume, while we admit the evident care with which each is written, we cannot help feeling that the compression which has been necessitated in order to carry out the idea of uniformity in the series goes some way to lessen the value of many of the books. The question naturally arises as to what class of student or medical man would be content with such manuals and we are forced to admit that we think it would not be a high one.

The volumes may be divided into two classes—those which treat of purely clinical subjects and those which deal with the earlier subjects in a medical curriculum. It appears to us that the manuals for younger students are more valuable than those intended for the more advanced ones. For instance, if we take the volume on Surgery, which is said to be "a manual for students and practitioners," we find that the joint authors attempt to deal with the subject in a small book of 295 pages. The authors are brave men. After a careful study of the volume we admit that the subject-matter is excellent so far as it goes and that the illustrations are beyond praise, and yet we do not know the kind of professional man to whom such a work would permanently appeal or who would be satisfied with it. The book is too much advanced to be regarded as a book on first aid; it is not intended to be a work on minor surgery, for the graver surgical conditions are many of them rather fully considered; for instance, to such a disease as appendicitis five pages out of the small sum-total are devoted; and yet no student or practitioner could possibly be satisfied to make this work his text-book of surgery, for many conditions are merely touched upon; the novice would not understand—he cannot read between the lines, the qualified man requires many more details. It appears to us that the only man to whom the book could really be useful is one who wants to take a general survey of his surgical work during the last few days before an examination for one of the minor surgical qualifications.

In the volume on Obstetrics the information is sound as far as it goes and the illustrations of the application of the forceps are particularly good. The authors of the volume on the Diseases of the Eye and Ear make no reference to auditory or aural vertigo under the name of Ménière's disease, though vertigo is alluded to as a symptom under diseases of the internal ear. In the volume on Diseases of the Skin an alphabetical arrangement of the diseases is given in order to facilitate reference, and because, as the author reminds us, the present classification of the cutaneous disorders from the standpoint of pathology is by no

means final. The volume on Anatomy runs to 389 pages of a print which is smaller than that contained in most of the volumes; it is a systematic work and not a companion for the dissecting room. Physiology is considered in a book of 255 pages; all the essential facts with which the student and practitioner should be familiar appear to be gathered together in this manual. In the volume on Normal Histology the intention of the writer has been to tabulate clearly and concisely the most important points; sufficient embryology is included to aid in a correct understanding of histology and a better appreciation of pathological processes. In the volume on Chemistry and Physics the purpose has been to set forth accepted and proved facts forming the basis of the sciences in a manner which, in the author's opinion, will serve best for their clear and easy understanding by the student. In each volume the chapters are succeeded by a number of questions on the subject-matter which will be useful in enabling students to review their knowledge when preparing for examinations.

The subject-matter of the volumes appears to us to be accurate, clear, and up to date, and the cardinal facts are ably set forth. The danger of a series of books of this kind lies, in our opinion, in the possibility that some classes of students may accept these volumes not merely as being of service in laying a foundation to their knowledge but as substitutes for the larger text-books. The books contain essentials but there is no room in them for explanations.

Diseases of the Heart and Aorta. By THOMAS E. SATTERTHWAITE, M.D., Professor of Medicine in the New York Post-Graduate Medical School; Consulting Physician to the Post-Graduate Orthopædic and Babies Hospital. New York: E. R. Pelton. Pp. 304.

THIS volume is based on a series of articles which originally appeared in medical periodicals; the whole contents of the work, however, have been carefully revised, so that much new matter has been added since the communications were first published. The aim of Dr. Satterthwaite has been to try to place before the general practitioner a brief, simple, but practical consideration of the affections of the heart and of the aorta. Most of the conclusions have been arrived at from the personal experience of the author and the whole character of the volume is essentially practical. Little space is given to the anatomy or the surgery of the heart and large blood-vessels, congenital anomalies and neoplasms of the heart are only briefly referred to in the appendix, and the subject of parasites affecting the heart is disposed of in about 15 lines. Theories and methods of treatment which are of interest mainly from a historical point of view receive but scant notice, as they are not of practical interest. Only brief mention, too, is made of the sphygmograph, as Dr. Satterthwaite believes that the use of this instrument is likely to mislead rather than to help at the bedside or in the consulting room. The practical value of the sphygmomanometer is, however, recognised.

Much stress is laid on the comparative value of diagnostic signs and the relative frequency and gravity of the various valvular lesions are referred to at length. After due consideration of the prognosis of affections of the valves of the heart Dr. Satterthwaite places the lesions in the following order as regards gravity, the most grave standing first: (1) mitral stenosis; (2) aortic insufficiency; (3) aortic obstruction; and (4) mitral insufficiency. This conclusion is arrived at by estimating the average age at death of patients suffering from the respective lesions. Authorities are not unanimous on this point but the above order is the one now accepted by some of the larger assurance societies. Many observers, however, still maintain that aortic insufficiency must be considered more dangerous than mitral stenosis and aortic obstruction as less serious than mitral insufficiency.

Taking the book as a whole, we consider that much useful

surprised to find that St. Bartholomew's Hospital is indexed as "Bartholomew's (St.)" under the letter "B," while St. George's, St. Mary's, and St. Thomas's hospitals appear under the letter "S."

Pannell's Reference Book for Home and Office. London: The Granville Press, Limited. 1905. Pp. 984. Price 6s. 6d.—This volume contains a large amount of valuable and useful information. It is arranged according to the following divisions: an English dictionary, aids to the study of English, a dictionary of general information, a medical dictionary, a guide to education and the professions, a social guide, the world and the empire, a legal guide, and a commercial guide. As a general book of reference it will be found very convenient as it contains many matters which are of interest to everybody. We cannot commend the idea of a "medical dictionary" intended for the use of the public. In this instance, however, the author of this section has succeeded in giving information which will be generally instructive without entering upon matters which concern a medical practitioner only. In fact, the author's intention has been well carried out. In the preface he explains that he wishes to offer "a few remarks to serve as a finger-post in directing the reader to the right use of this dictionary of medicine, which is not intended to supersede the doctor but to indicate when he should be called in and to act as a guide in emergencies when he is not immediately available, or in simple cases when his aid is not needed." The author further says that he has aimed at making this dictionary a "guide to health." He gives some sound advice as regards domestic and general hygiene but carefully avoids giving any directions as regards drug treatment which could only be carried out under the directions of a medical man. The section on "General Information" deals with an immense variety of matters, from the names most frequently occurring in current literature to the distinguishing letters on motor-cars.

The Royal London Ophthalmic Hospital Reports. Edited by WILLIAM LANG, F.R.C.S. Eng. Vol. XVI., Part III., October, 1905. London: J. and A. Churchill. Pp. 209. Price 5s.—This part of the Royal London Ophthalmic Hospital Reports contains eight articles, all of which are of interest. The first is by Mr. E. Nettleship and deals with the subject of heredity in the various forms of cataract. He recognises two principal classes, acquired or postnatal and congenital cataract. The congenital is subdivided into lamellar, the much less common axial or spindle form, and complete cataract. A considerable number of cases have been collected by Mr. Nettleship, many from his own practice and many from journals, theses, and other sources in which the heredity is clearly shown by genealogical tables. One remarkable case is that of a family in which five generations present a total of 30 cases of cataract in 90 persons. A good bibliography is appended to the article. Mr. E. Treacher Collins has a communication on Capsular Complications after Cataract Operations. In some instances the complications resulted from adhesion of the lens capsule to the extraction scar, either becoming entangled in the wound or adherent to the back of the wound; in other instances the complications resulted from opacity occurring in connexion with the lens capsule after extraction of cataract. Examination with the microscope showed in different cases retained lens substance, wrinkling of the anterior capsule and new growth of cells lining it, and adventitious fibrous tissue. Three plates accompany this article. Mr. George Coats gives an account of a case of Obstruction of the Central Artery of the Retina. This article is illustrated by three plates showing sections of the obliterated artery. Mr. Angus MacNab describes Marginal Blepharitis, its Cause, Pathology, and Treatment. He finds that the majority of cases have the Morax-Axenfeld bacillus in the secretions. The treatment

by the use of sulphate of zinc gives the best results. Mr. M. S. Mayon contributes an article on Implantation Dermoids of the Conjunctiva, illustrated with one plate. Glioma Retinae is a reprint of a thesis by Dr. S. A. Owen, read for the M.B. degree before the University of Cambridge. The two remaining articles are on Papilloma Limbi Conjunctivæ, by C. Pascheff, M.D., of Sofia, Bulgaria, with two plates, and a Case of Tubercle of the Nerve Head, by Mr. G. Coats, with a plate.

The Englishwoman's Year-Book, 1906. Edited by EMILY JAMES. London: Adam and Charles Black. Pp. 402. Price 2s. 6d. net.—This year-book will be found of the utmost value to any woman who is thinking of taking up any employment, in whatever class of life she may be in. It is full of information and seems to us to be most carefully edited. We see that the work is in its twenty-sixth year of issue and it is curious to compare the variety of occupations in which women are now engaged with those open to them a very few years before the first issue of the year-book in question.

The Schoolmaster's Year-Book and Directory, 1906. London: Swan Sonnenschein and Co., Limited. Pp. 562. Price 6s. net.—This work may best be described to our readers as being, *mutatis mutandis*, the schoolmaster's "Medical Directory"—that is to say, it gives much the same information to schoolmasters and others connected with the teaching profession as does the Medical Directory to medical men. The introductory review of the year is somewhat pessimistic in tone, for the author says: "We have neither the schools, nor the men, nor the money." We feel inclined to add "nor the grammar" which we trust the schoolmasters will not endorse.

"*Porte-vous bien?*" By Dr. TERWAGNE. Third edition. Paris: Vigot Frères. 1905. Pp. 115. Price francs 1.50.—This is an excellent little brochure giving popular and rational elementary views about hygiene by a medical man who is a communal councillor of Antwerp and vice-president of the league against tuberculosis. Anyone who will read it and follow its practical suggestions will be able "to carry himself well"—i.e., to keep in good health without the aid of physicians or druggists. The author is a very self-denying medical man who shows his clients how to do without him and his services. The opusculum gives short, concise talks on air, light, water, foods, sleep, trade or profession, work, tobacco, the temperaments, and, lastly, health, which is "le seul capital indispensable."

A Treatise on the Parasites and Parasitic Diseases of the Domesticated Animals. By Professor NEUMANN of Toulouse. Translated by GEORGE FLEMING, C.B., LL.D., F.R.C.V.S. Second edition, revised and edited by Professor MACQUEEN F.R.C.V.S. With 265 illustrations. London: Baillière, Tindall, and Cox. Pp. 957. Price 21s. net.—There is no book in the English language which deals with the parasitic diseases of the domesticated animals so fully as the late Dr. Fleming's translation of Professor Neumann's work; and the second edition has been in every way completely revised and brought up to date by Professor Macqueen. It is a standard authority and deals not only with the transmissibility of the parasitic diseases from animal to animal but also from the lower animals to man; and for the student of comparative parasitology, whether he is a medical or a veterinary practitioner, every page contains something of interest. It is a book which should find a place in every medical library and on the book-shelves of every specialist in skin diseases and of every medical officer of health.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXIII. Nos. 4 and 5. London: C. J. Clay

absolutely relied upon. Among the drawbacks to the biological test are its intricate technique and the long experience that is required before trustworthy results can be obtained. Professor Uhlenhuth admits this difficulty and with a view of rendering aid to those practitioners who may wish to employ these tests he has made this collection of the numerous articles which he has written on the subject. This entails a certain amount of overlapping in the various chapters but in dealing with a difficult and important subject repetition is not a serious fault.

Various other albuminous substances which may be encountered in medico-legal practice, such as stains of seminal fluid, are also referred to and it is explained how biological tests may be of value when such examinations have to be made. This book will be found of considerable value to those who are interested in forensic medicine.

Handatlas der Operationen am Schläfenbein, für Aerzte und Studierende, insbesondere für angehende Spezialärzte. (Hand Atlas of Operations upon the Temporal Bone, for Physicians and Students, especially for those commencing to Specialise.) By Professor GERBER of Königsberg, Prussia. With ten tables and nine plates in the text. Wiesbaden: J. F. Bergmann; Glasgow: F. Bauermeister. 1904. Pp. 46. Price 8s.

THE hand atlas of Professor Gerber is intended largely as a means of enabling practitioners to have within their reach a lucid and illustrated description of those operations which are connected with diseases of the ear, so that those who are unable to have access either to anatomical preparations or to skilled assistance may be able to relieve those of their patients who are suffering from any aural disease necessitating operation.

The first division of the work deals with the complications of suppurative otitis demanding operation and the operation indicated for each complication. These details are given in a tabular form and are clear and concise. The directions with reference to the moment to be selected for operation are given in an extremely vague way, for Professor Gerber says that "when the critical moment has arrived, after conservative treatment has failed, then it is necessary to operate," although later this vague direction is somewhat more sharply defined. He then proceeds to describe, in the fewest possible words, the preparations for operation. The armamentarium of the surgeon is laid down with elaborate detail. Professor Gerber then deals with the post-aural operations, commencing with a general description, applicable to all, describing the ordinary semicircular incision, which commences above the auricle and terminates at the tip of the mastoid process. He then considers what he terms "the typical opening of the mastoid," but which is better known as the "Schwarze" operation. There is nothing whatever new in this but it is very clear. Professor Gerber next enumerates the various abnormalities which may interfere with the technique of the classical operation and then the method of opening the antrum in these unfavourable circumstances, as, for instance, in cases where the lateral sinus is very high up and far forward. Next comes the radical operation. This part of the work is divided into several sections and the classical operations of Zaufal and Stöcke are carefully portrayed. Professor Gerber next proceeds to treat briefly the plastic methods adopted when covering in the operation cavity partly or entirely with skin. He devotes considerable space to the after-treatment which is very carefully reviewed. A short account is given of the various methods of closing the retro-auricular openings, a procedure which, we are glad to say, is rarely required at the present time in this country. Next follows the operation

necessary for opening the labyrinth, followed by the procedure employed for dealing with the various collections of purulent material within the cranium, extradural, cerebral, and cerebellar. In a few words, meningitis serosa, lumbar puncture, puncture of the ventricle, purulent pachymeningitis, and leptomeningitis are dealt with. The letterpress concludes with the description of operations on the lateral sinus, ligature of the jugular vein, and the laying bare of the jugular bulb. Throughout Professor Gerber is unusually sparing in his words. They are clear and concise, though perhaps hardly sufficiently lucid really to enable surgeons not thoroughly conversant with the surgical anatomy of the part to work with any confidence, at any rate, in their earlier operations.

The plates are very admirable reproductions of operations performed on the cadaver; the first plate depicts the incision, the next the bone, with the soft parts retracted, one showing the opening in a case of simple disease of the antrum, and another that in a case of disease of the mastoid process. The next four drawings represent the second and third stages of a radical mastoid operation and the completed operation. Stöcke's operation comes next, together with three phases of one method of dealing with the external auditory meatus, and the only criticism which we wish to make on this is that the cutaneous surface appears to have been most obligingly elastic, more so we fear than will be found in practice. The fourth plate consists of two other methods of dealing with the external meatus and a method of applying the bandage. The fifth plate deals with the plastic methods of closing a post-auricular opening. Two figures in Plate VI. are devoted to the opening of the labyrinth and are relatively clear. In the other two figures in this plate the dura mater is exposed in the temporal fossa. In Plate VII. operations on the lateral sinus are depicted. Plate VIII. shows the dissection necessary for ligation of the jugular vein and the freeing of the bulb. In Plate IX. the dissection employed for laying bare the lateral sinus and the jugular vein in continuity is delineated. The last plate shows three anatomical figures, the soft parts having been removed, the first representing a radical operation on the tympanum; the second this combined with exposure of the facial nerve and jugular vein; and the third merely the removal of the front wall of the mastoid process.

Professor Gerber has already earned the gratitude of all rhinologists by the production of his "Atlas of Rhinology." The work at present under consideration, we regret to say, does not occupy relatively so high a position. It is, however, an extremely useful work and will be much appreciated by those for whom it is intended, the more so as its very moderate price will place it within the reach of all. It will be a most useful work in operations on the cadaver, for except under extraordinary conditions it cannot be desirable that a surgeon should work up overnight the technique of these operations, some of the most difficult in surgery, intending to employ them on the living subject the next day, for there probably exists no class of operation requiring greater experience and more skilful technique. However, as a guide to operative aural surgery, especially on the dead body, there certainly exists no better book.

LIBRARY TABLE.

Herbert Fry's Royal Guide to the London Charities. London: Chatto and Windus. 1906. Pp. 293. Price 1s. 6d.—This, the forty-second annual, issue of "Fry" is as useful as ever and forms an excellent guide for those who have money to dispose of for charitable purposes but are ignorant as to how they shall dispense it. We must draw the editor's attention to one irregularity. We naturally returned to the entries concerning the hospitals and we

Asphyxia, by Ivy McKenzie, M.A., M.B. Glasg. 6. On the Development of the Hind Brain of the Pig, by O. Charnock Bradley, M.B., D.Sc. Edin., with six plates. 7. A Study of the Astragalus, by R. B. Seymour Sewell, B.A. 8. The Arrangement of the Elastic Fibres in the Bronchi and Lung, by James Miller, D.Sc., M.D. Edin., with five illustrations in the text. 9. A New Method of Demonstrating the Topographical Anatomy of the Adult Human Skull, by Sydney R. Scott, M.B. Lond. 10. A Note upon the Mode of Termination of the Posterior Tibial Artery and Nerve, by Charles R. Whittaker, L.R.C.S. Edin., with three drawings in the text. This part also contains the Proceedings of the Anatomical Society of Great Britain and Ireland for August, 1905.

New Inventions.

IMPROVED GOUGE FOR MASTOID OPERATION.

IN the performance of the radical mastoid operation for suppurative disease of the middle ear I have found two instruments very useful. They are both modifications of those usually employed. The first is a quarter-inch gouge of very shallow curvature with square ends. The second is shaped like a carving chisel and its appearance is well shown in the accompanying illustration. This latter instrument is especially useful in removing the posterior wall of the meatus in young children, as only a very small portion of the cutting edge is used at one time.

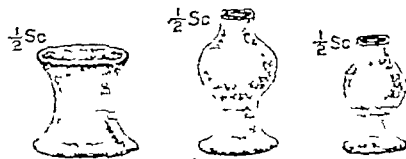
Both instruments are made with Ballance's handles and they form part of a complete set which have been specially made for me by Messrs. Cuxson, Gerrard, and Co., Birmingham, with the handles all of uniform weight and size; this is a convenience in changing from one instrument to another.

A. KNYVETT GORDON,
Medical Superintendent, Mousall Hospital,
Manchester.

MOUTH PROPS FOR USE DURING SURGICAL ANÆSTHESIA.

HAVING up to recent times used solid vulcanite dental mouth props placed sideways between the teeth when it was necessary to keep them apart in certain cases of jaw spasm and obstruction to nasal breathing, I have lately devised an improved set of three hollow metal props which have a good deal of advantage over the other makeshift ones. Their superiority lies in the facts: (1) That they are sterilisable and indestructible by boiling or strong antiseptics; (2) that they allow of respiration when the jaws and lips are closed on and around them (a very important point in edentulous patients and people with full lips); and (3) that two of them are flattened at one end in order to make introduction easier during anaesthesia. The large one I usually place between the teeth before anaesthetising; big strong men, cases of intestinal obstruction with vomiting, and patients suffering from nasal obstruction, because it gives a very free way for air or fluid and keeps the jaws well apart; it is also intended

for use during narcosis of edentulous patients. The smallest prop may be useful in children. The illustrations will show the shape and relative size of the set of props. I am much



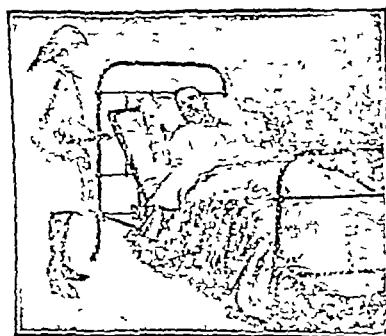
indebted to Messrs. Down Bros., of St. Thomas's-street, London, S.E., for the care and trouble which they have taken in carrying out my wishes in the matter.

W. J. MCCABDIE,
Anæsthetist to the General, Dental, and Ear
and Throat Hospitals, Birmingham.

THE EQUIPOISE COUCH COMPANY: A CORRECTION.

THE Equipoise Couch Company have pointed out to us that our description of the principle upon which the Equipoise Bed, Couch, and Chair works, as published in THE LANCET of Jan. 27th, is in certain respects not accurate. The principle on which these inventions work, and, indeed, upon which the main claim for novelty depends, has not, we admit, been made clear. And this principle is particularly ingenious.

All the articles are made in three parts, corresponding to the back, seat, and leg, and are connected by hinged joints. The novelty lies in the fact of the rear supports, or legs, being pivoted to the base and also to the back at the exact centre of equipoise, so that when in use the occupant can either remain level as in an ordinary bed or, if he so desire, he may, by merely bending the body at the hips, smoothly and easily raise himself



to the sitting or any intermediate position. As the back rises the seat declines at the back end, so that there is no tendency for the patient to slip towards the foot of the bed, as undoubtedly often happens when bed-rests are used, or merely supporting pillows. The leg part of the Equipoise couches is arranged to remain on the level or to decline in unison with the movement of the back, so that a change of position, often most grateful to the invalid, can be assumed for any purpose at any time. The patient merely releases a catch and the balance principle does the work. The new illustration shows the ease with which an Equipoise Bed can be raised or lowered; the child represented is moving the bed with one finger only, a point which will particularly appeal to those nursing heavy and helpless invalids. The bed can be locked securely in any position by depressing a handle, one of which will be found in a convenient position on either side of the bed. We recommend our readers to inspect the productions of the Equipoise Couch Company at the Institute of Hygiene.

A CONSCIENTIOUS OBJECTION TO VACCINATION.—At Brixham, Devon, on Jan. 26th, a stonemason applied for a vaccination exemption order chiefly on the ground that, being a vegetarian, he did not wish to have "animal matter" introduced into his child's system. The exemption was eventually granted, although one of the magistrates (Lord Clouston) strongly urged the applicant to have his child vaccinated.

and Sons. Pp. 187. Price 11s.—The following articles are contained in this number of the *Journal of Physiology*: 1 Colloidal Solution: the Globulins, by W. B. Hardy, Fellow of Gonville and Caius College, Cambridge, with 10 figures in the text. This is a long and important article. It deals with the behaviour of globulins to acids, alkalies, and salts, and the properties of the solutions considered as cases of colloidal solution. 2. Globulin, by J. Mellanby, with 16 figures in the text. Mr. Mellanby gives the following summary of the results that he has obtained: (1) Solution of globulin by a neutral salt is due to forces exerted by its free ions. Ions with equal valencies, whether positive or negative, are equally efficient and the efficiencies of ions of different valencies are directly proportional to the squares of their valencies. (2) The amount of globulin dissolved by a given percentage of neutral salt is directly proportional to the strength of the original globulin suspension. (3) The precipitation of globulin from solution in neutral salts by neutral salts depends upon a molecular combination between the salt and globulin, the compound so formed being stable only in excess of the combining salt. Precipitation by salts of the heavy metals depends upon the formation of a stable salt globulin compound. (4) Solution of globulin by acids or alkalies is of the nature of a chemical combination. The relative solvent efficiencies of strong acids and alkalies are of the same orders as their chemical avidities. 3. On the Reaction of Cells and of Nerve Endings to Certain Poisons chiefly as regards the Reaction of Striated Muscle to Nicotine and to Curari, by J. N. Langley, professor of physiology in the University of Cambridge, with eight figures in the text. Professor Langley concludes from his experiments that in all cells two constituents at least must be distinguished: (1) substance concerned with carrying out the chief functions of the cells, such as contraction, secretion, and the formation of special metabolic products; and (2) receptive substances especially liable to change and capable of setting the chief substance in action. Further, that nicotine, curari, atropine, pilocarpine, strychnine, and most other alkaloids, as well as the effective material of internal secretions, produce their effects by combining with the receptive substance and not by an action on axon endings if these are present or by a direct action on the chief substance. 4. The Paralysis of Involuntary Muscle, Part 3, on the Action of Pilocarpine, Physostigmine, and Atropine upon the Paralyzed Iris, by Dr. H. K. Anderson, with three figures in the text. This number also contains the Proceedings of the Physiological Society, Nov. 11th, 1905.

Medical Electrolgy and Radiology.—In the December number of this journal Dr. E. Reginald Morton contributes a paper on the Measurement of the Current passing through an X Ray Tube. The interesting feature of this is the employment of the oscillograph vacuum tube of Ruhmer, by which, under suitable conditions, the curve of the current traversing the tube can be observed directly. This tube is one of the most interesting instruments that has recently been brought out and since it can be used as a milliampèremeter as well as an oscillograph it will in all probability become very popular among the users of high tension and variable currents.

The Archives of the Rontgen Ray.—In the number for January Dr. Ernest Kingscote has an interesting note on the Diagnostic Value of the Roentgen Ray for the Soft Organs of the Body. The case in question had been successively diagnosed as one of aneurysm, new growth, and floating kidney. A skiagraph revealed a dilated heart pushing the diaphragm downwards towards the umbilicus in a wedge-shaped depression and the organ appeared to be dragging on the ascending aorta.

Three months after a six weeks' course of the Schott-Nauheim treatment the patient was very much better and the skiagraph showed that the heart had assumed the normal position. The case goes to show the importance of x ray examination in cases of the kind, since the ordinary methods of examination had revealed physical signs which were misleading. H. Guilleminot continues his paper on the Exploration of the Thorax by Orthodiagraphy, as also does H. E. Gamlen his Report on the General Utility of High-frequency Currents. With regard to the latter it is difficult to determine just how far the high-frequency currents have been responsible for the benefit accruing in some of the cases. The paper is interesting, however, and may be referred to with advantage. From the point of view of electro-physics the papers by Maurice Leblanc and William Rollins are very valuable contributions, both of them being continued from a previous number. The former, dealing with the Cooper Hewitt Mercury Vapour Lamp and Valve, shows how exceedingly useful this instrument may be both experimentally and commercially. It is here shown, among other things, that, contrary to the generally accepted opinion, a vacuum tube becomes a better conductor of electricity as the vacuum becomes higher. The future development and applications of the Cooper Hewitt lamp will be watched with great interest. Some excellent reproductions are given of radiographs of injected specimens made by A. G. Fryett of Melbourne and a very complete set of notes and abstracts assists to make up a very interesting number. We notice, however, that of the six original articles four are continued from previous issues and the two which are complete are very short. While quite appreciating editorial difficulties we cannot help thinking that the proportion of continued articles is rather large for a monthly journal.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., F.R.S.; D. J. CUNNINGHAM, M.D., F.R.S.; G. S. HUNTINGTON, M.D.; A. MACALISTER, F.R.S.; and J. G. M'KENDRICK, F.R.S. Vol. XL. Third series. Volume I, Part II. With plates and illustrations in the text. London: Charles Griffin and Co. 1906. Pp. 102. Annual subscription one guinea.—The articles contained in this number of the *Journal of Anatomy and Physiology* are: 1. On the Fate of the Tænia Olinio orbitalis (Gaupp) in Echidna and in Ornithorhynchus respectively, with demonstration of specimens and stereo-photographs, by J. T. Wilson, M.B., C.M. Edin., professor of anatomy, University of Sydney, Sydney, New South Wales. This paper was read at the first International Federative Congress of Anatomy at Geneva in August, 1905. 2. Note on the Development of the Thymus Gland in Lepidosiren Paradoxa, by Thomas H. Bryce, M.A., M.D. Edin., a paper read at the first International Federative Congress of Anatomy at Geneva in August, 1905. Dr. Bryce has satisfied himself that the thymus in lepidosiren has up to an advanced larval stage absolutely nothing to do with the formation of the leucocytes. 3. Observations upon the Cetacean Flippers with special reference to Hyperphalangism and Polydactylism, by J. Symington, M.D. Edin., F.R.S. 4. Note on the Elastic Tissue in the Eye of Birds by E. W. Wace Oarlier, M.D. Edin., F.R.S. Edin. The birds examined and described in this paper are the house sparrow, chaffinch, goldfinch, skylark, swallow, blue tit, wren, wild duck, common gull, tern, and the budgerigar; bird's eyes contain a large quantity of elastic tissue and are provided with a special elastic tendon for the insertion of the ciliary muscle. In most birds the membrane of Descemet consists mainly of elastin and the pectinate fibres are chiefly composed of elastic tissue. The ciliary muscle invariably ends in a conspicuous bundle of rather coarse elastic fibres that bifurcate posteriorly, one portion being inserted into the choroid, the other portion into the perichondrium of the inner surface of the sclerotic cartilage. 5. Pulmonary Changes in

needed. The failure to do this may not often be discovered when the child recovers, but when death occurs a prosecution almost always is instituted which has a deterrent effect upon others. Whatever view, however, may be taken as to the desirability of legislative interference, it should, at any rate, be understood clearly that not a few deaths take place in the manner indicated, some of which are the result of deliberate crime, while all are preventable.

The Visit of the London County Councillors to Paris.

DURING the whole of next week the members of the London County Council will be enjoying the hospitality of the Paris Municipal Council. The reception promises to be most brilliant and cordial. Gala representations, both serious and of the light variety description, will enable the London county councillors to see how theatres and places of amusement are made to contribute to the maintenance of the Paris hospitals. The heartier the laughter, the more beautiful, attractive, and interesting the play, the larger the receipts for the relief of the poor and the suffering. Thus pleasure helps to relieve pain and sorrow and this in a very direct and material manner. Even the vice of gambling is utilised. Both the municipality and the Parliament have endeavoured to prevent horse-racing from degenerating into a mere pretext for gambling. "Bookmaking" has been suppressed by the strong arm of the law and the *pari-mutuel* substituted. But this State-controlled betting is only sanctioned on condition that a portion of every bet is handed over for the upkeep of the hospitals. If a person can afford to bet on a horse he can afford to subscribe to the hospitals and the law sees that such a contribution is duly deducted from the amount of the bet. Though the position of the general hospitals in London is, and we trust will remain, quite different, it will be interesting to our county councillors to see for themselves "how they manage these things in France."

Other objects of interest will be the *cantines scolaires* and the municipal bakery in the Rue Sipo where bread is produced for the 14,000 inmates of the Paris municipal hospitals. In regard to food-supply, the fact that there are no private slaughter-houses should be investigated. The great abattoirs at La Villette are not models of what a municipal slaughter-house should be, for they were built many years ago, but they are very much to be preferred to the numerous private slaughter-houses of the British metropolis. Also, though the *halles* do not possess the picturesque aspect of the old portion of Covent Garden Market, they are infinitely better suited to the needs of a great city. It will be interesting to compare the Parisian methods of inspection of meat and other alimentary substances with those in force in London, and to see how far the costermonger class are controlled so that they shall not sell that which is unfit for consumption. As regards matters relating to the drainage of private houses and to public sewers there is probably more to be learnt in London than in Paris, but the *casiers sanitaires des maisons* is a method of control which surpasses anything similar in England. It would be worth while for any town council to

go to Bordeaux¹ or to Paris if only for the sake of studying this method of keeping the record that builds up the complete sanitary history of every dwelling. Then again, in regard to the ventilation, the warming, and the application of the principle of unilateral light to the class-rooms of the Paris schools, there is a good deal worthy of observation. The ventilation of the great hall at the new Sorbonne is a notable endeavour to provide an audience of some 3000 persons with an ample supply of pure unwarmed air. The inlets are so contrived that this cold air, even in winter, passes through the great hall without causing a draught. The heat comes by radiation from all the walls and from every seat or article of furniture which has been previously heated.² This will be a great revelation to many of the county councillors if they can find time in the midst of all the festivities to study so serious a matter. But as they are the authority which in London controls theatres and other places like the Sorbonne, where large concourses of people gather together, this is a problem which is intimately associated with their work and responsibilities.

Such are a few of the matters connected with the preservation of public health which should prove of special interest to the London County Councillors on the occasion of their forthcoming visit to Paris.

Unwelcome Visitors.

THERE are worries affecting every class of the community which produce feelings of irritation often wholly disproportionate to the exciting cause; the irritation is, indeed, greater because the exciting cause is so trivial. Amongst members of the medical profession one of the chief sources of discomfort is to be found in the unnecessary disturbance of routine produced by an unexpected and perhaps unwelcome visitor who appears upon a "matter of business." No consideration need here be given to the consulting-room sneak, the light-fingered individual whose plausible story is told to servants and is intended solely to enable him to be left alone for sufficient time to annex portable property. We are referring now solely to the visits of travellers for various enterprising firms or foreign municipalities, who break in on the working day of general and consulting practitioner alike with eager persistency. We are generally addressed by the consulting practitioner upon the subject, but, as a matter of fact, country practitioners, especially those in a good position, are pursued with equal zest. It appears to be hoped that having often small leisure for reading they may thankfully receive up-to-date information without much destructive criticism of the terms upon which such information is imparted. Those who work in poor districts in town or country are often spared, perhaps because they frequently dispense their own remedies and so are likely to use fewer proprietary wares, but the practitioner who prescribes for the use of the druggist and the consultant, medical and surgical alike, are pursued relentlessly.

The type of caller varies from the agent of a firm interested in the employment of a new patent food to the peripatetic

¹ See THE LANCET, August 13th, 1893, p. 422, New Sanitary Service at Bordeaux.

² See THE LANCET, Jan. 2nd, 1892, p. 42.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 3, 1906.

Overlying.

OUR Manchester correspondent¹ recently called attention to the frequency with which the suffocation of children sleeping with their parents takes place at Manchester at "week-ends," and he mentioned that four inquests had been held by the city coroner upon infants thus overlain during the late Christmas season. In the case upon which he was commenting four persons had been sleeping in one bed and this had been the condition also in two instances which recently occurred at Lambeth and with regard to which Mr. TROUTBECK held inquests on the same day. In one of these latter instances it was alleged by way of excuse that the bed in which the children usually slept could not be occupied by them because the rain came in upon it and the statement was made that in three years' time the house was going to be pulled down. However this may have been there can be little doubt that in a great number of cases poverty and the inability to provide a separate crib are pleaded by the parents as an excuse for the dangerous position which the infant occupies in their bed, and further, that a drunken or semi-drunken condition of both or perhaps only of the mother is in fact the cause of the child's death. The parents' drunken negligence ought to make them criminally liable. The Manchester coroner expressed himself to this effect and in the case alluded to by our correspondent avowed his intention to commit for trial upon a charge of manslaughter any parents overlying their infants against whom evidence of their being under the influence of alcohol could be found. The nature of the occurrence, however, renders such evidence almost impossible to obtain. The parents may live among neighbours whose standard of duty and of decency is no higher than their own; they may have been seen by no one when they returned home from the public house or they may have consumed their liquor in the privacy of their own room. They may not, moreover, have attained to a pitch of intoxication which those about them would recognise as drunkenness and yet may have been sufficiently fuddled by drink to fall asleep and to remain asleep in complete indifference as to the baby's welfare. Therefore, whether there is drunkenness or not, it is almost incapable of proof and if the frequency of overlying is to be diminished it must be done in such a manner that all cases may be covered and the matter must be considered generally and apart from a particular phase of it.

Mention has been made of the alleged poverty of the parents or parent, and in connexion with this the observation is often made that any box, such as an old orange box, can be adapted for use as a cradle. It must be borne in

mind, however, that the actual bedstead is not all that is required to make a bed and that warmth is essential to the young child. His parents may be sleeping in a bed almost devoid of blankets and bedding and they would no doubt say that although a box alone might be obtainable, bedding would be beyond their means. They probably reflect also that warmth by making the baby comfortable keeps him quiet at the same time and that when in the bed he can be nursed with the least possible amount of trouble to his mother. On the other hand, it may be said that a decent and an intelligent woman, fond of her child and solicitous for his welfare, would never sleep with him in the bed which she occupies with his father, and that where the parents at the time of the child's death are so poor that they could not have assigned to him bed and bedding of some kind the question may be raised whether this poverty is not due to their own fault. In other words, if decently behaved, frugal, and industrious parents can put their children to sleep in conditions consistent with their health and safety, must we permit other parents to imperil human lives merely because by their improvident and self-indulgent habits they have put it out of their own power to do otherwise? Can we not provide for the punishment of these in order to prevent the sacrifice of life without dealing too hardly with cases of extreme poverty where this is the result of genuine misfortune?

The word punishment has been used because it appears to us that if this particular variety of preventable infant mortality is to be put an end to the method adopted must be penal. Gentler measures, such as education and advice, would affect but few instances, for they would only appeal to women of a respectable class who as a rule do not adopt the practice complained of. Education and advice would have little effect upon the drunkard and would entirely fail to touch those whose action is more or less deliberate and intentional. We must not forget in dealing with this matter that the death of an infant in many families is, perhaps tacitly, regarded as a blessing and that in many those who would not deliberately compass it look back upon it with no regret. Instances occur in which a mother in the course of her married life overlies not one but several infants, with the inconvenience to herself that she may have to submit to reproof at the hands of a coroner but with the certain result that she avoids the daily burden of bringing up a family. As to the manner in which the law should operate this is hardly for us to suggest. In order that all parents killing their children in the manner indicated might be sent for trial and convicted in a substantial number of cases of manslaughter by criminal negligence no legislative change would be necessary, but it would imply the introduction of a new practice in which juries might or might not be willing to acquiesce, even though judges were favourable towards it. On the other hand, the compulsory provision of a separate sleeping place for a child under a fixed age would be objected to by some as an interference with the liberty of the parent and as tending to expose the child to suffering from cold. It would also be difficult to enforce. A parallel nevertheless may be found in the comparatively recent obligation laid upon parents to provide their children with medical aid when

¹ THE LANCET, Jan. 20th, 1906, p. 189.

Innotations.

"He quid ululit."

PROPOSED UNION OF MEDICAL SOCIETIES.

AT a meeting of the representatives of the various societies held on Dec. 19th, 1905, an organising committee was appointed to draw up a definite and detailed scheme on the lines published in THE LANCET on July 29th, 1905, p. 310, after consultation and discussion with each society which has expressed its willingness to join under certain varying conditions. One of the first essentials is to show that the scheme is likely to be a financial success. A reply post-card has been posted by the honorary secretaries to over 5000 individuals asking for an immediate reply to certain questions as to the probability of their joining the new society as Fellows or members. We understand that a Fellow will be asked to pay £3 3s. per annum for the privilege of attending discussions at all sections, of the free use of the general library, and of receiving the proceedings and transactions of the society. A member of a section will be asked to pay £1 1s. per annum for the privilege of taking part in the proceedings of that section, of receiving its publications, and of using the general reading room. Such a member will be entitled to join other sections at a subscription of 10s. 6d. for each additional section and to join the general library at a subscription of £1 1s. Every member of a society taking part in the amalgamation who desires to become a Fellow of the new society or a member of the corresponding section will be entitled to do so without election. Individuals elected subsequently to the constitution of the new society will have to pay entrance fees. As far as can be seen at present only original members of a section and those who are subsequently elected members of it will have the power to vote on matters directly affecting the affairs of such a section.

THE GUILD OF THE BRAVE.

UNDER the above title we have received an article from Dr. Helen McMurphy of Toronto pointing out the extraordinary heroism exhibited by hospital patients as well as their keen sympathy in the plight of their fellow patients and, sometimes, in the labours of the medical men and nurses. Every visiting or resident medical officer must have noted this and Dr. McMurphy's words, addressed to an imaginary house surgeon, will have the force of truth. "Yesterday you lost a public ward patient," she writes, "and as you passed on your round from the bed of death to those whom death had spared a very sick man looked at you gently and, forgetting his own desperate plight, said to you softly, 'You are disappointed, doctor.' The sympathy of that brave man went far to make you go on with your work." Many house surgeons can remember instances where the sympathy of one patient with another has been of the most practical sort, and nothing delights an inmate of a hospital, as a rule, more than to be given some detail to attend to in the treatment of another inmate. We received from another correspondent this week an account of a recent occurrence in a large general hospital, and the episode has a similar bearing. Two men were working in a lift when it fell with them for a distance of about 50 feet. They were taken out and brought to the hospital. One died before he could be got up to the ward. The other, a shattered mass of humanity, was put to bed to see if anything could be done for him. On recovering consciousness he said to the house surgeon who was sitting by his bed, "How's my mate?" and five minutes later he had rejoined him. Perhaps the most signal proof of the

courage of the average inmate of a hospital is the quiet manner in which he accepts the verdict of the surgeons as to the necessity for an operation. He comes to the hospital perchance because he has had difficulty with his bowels or because he has noticed that his urine is dark coloured. Two days later he is told that a "serious operation must be performed." He is very likely the bread-winner, and he makes up his mind that as he cannot work in his present condition he will face death. So he just tells his wife and resigns himself into the hands of those who, he feels, know better than himself. Truly to conduct such as this we may apply the words of Milton:

"Nothing is here for tears, nothing to wail
Or knock the breast, no weakness, no contempt."

"Our patients," says Dr. McMurphy, "are our masters in courage," and, indeed, to work in a hospital is to receive many a lesson in contentment, in patience under suffering, and in courage in bearing up in the most adverse circumstances. Well may Dr. McMurphy talk of the Guild of the Brave.

THE VOLUNTEER MOVEMENT.

A PROPOSAL has been put forward by Dr. F. Churchill before the Tactical Society of Edinburgh for utilising the services of the young men toilers in our crowded cities, many of whom are living in lodgings under very insanitary conditions, by providing accommodation for them in barracks designed and conducted very much on a club principle, similar in all respects to the "Rowton Houses." These should be erected in suitable and healthy localities where young men could be housed and boarded while they were being instructed and systematically drilled and trained. This has an important bearing also on the housing of the urban labouring classes. Supposing a convenient site in the suburbs of large towns to be selected for the erection of such buildings and the capital provided as a financial investment by philanthropic effort the Government might be asked to increase the capitation grant by 6d. a day (£9 2s. per head per annum) with the view of providing lodging for, and turning out, 50,000 efficient volunteers. Dr. Churchill considers that if this were done his project might be carried out at a relatively small cost to the State. It is needless to add that the scheme, if favourably viewed by the War Office, would have to be worked out very carefully, especially as regards its practicability and financial details, before its adoption.

THERAPEUTIC FASTING.

UNDER the heading of Common Colds in our issue of Dec. 23rd, 1905, p. 1854, we commented on a somewhat heroic method of treating colds recommended in America by Dr. Charles E. Page. We have since found that by a coincidence the *American Medical Record* of the same date contained an article by Dr. Page on the Curative Treatment of Pneumonia. He has also written to us from Boston expressing the opinion that pneumonia is mainly due to the use of "excessive clothing," and he proposes to treat it by a combination of hydrotherapy and fasting. His method of hydrotherapy consists of local cooling, not chilling by means of ice-packs but persistent cooling by a cold compress applied over the entire chest in front, the compress to be wetted with cold water as often as it becomes hot until the walls of the engorged blood-vessels have been braced to the point of resuming their normal calibre. When this stage of the treatment has been reached it is considered that the patient is convalescent and out of danger provided that his therapeutic fast is not prematurely broken. With regard to food Dr. Page says that from the time of Hippocrates to our own day therapeutic fasting has been the sheet-anchor of every expert sick-room dietist in

foreign practitioner, generally the accredited emissary of his locality, who is anxious to spread the knowledge of the remedial virtues of the special continental spa which is honoured by his habitation; but in all cases the personal interest of the caller is always evident from the first. Many such persons are excluded by a well-trained domestic who has received instructions to make minute inquiries about the business of all who come without an appointment, but such instructions are often defeated by the visitor who meets them with the presentation of a professional card. Medical men are always assumed to be glad to welcome members of their own profession and this fact is accordingly exploited by those who feel that a personal interview may favour the cause which they have at heart. In charity it is reasonable to consider that all these callers are primarily actuated by a praiseworthy desire to be useful to those upon whose over-occupied time they levy a tax. Many are merely carrying out the instructions which they have received and their untrifling industry may be regarded as commendable, though their methods may not be fully appreciated. That these methods fail to give universal satisfaction may be due to some lack of tact or discretion, some loss of the sense of proportion which may raise a smile or a frown when the caller proceeds to lecture his victim, incidentally showing that his didactic efforts are based upon insufficient data. It is natural that these usually unwelcome visitors should call during consulting hours. If they are to succeed in gaining access to the medical man they can only hope to do so by coming when others are hoped for or even expected. They pay a surprise visit and are, for the most part, pachydermatous when informed that the surprise is not a pleasure. This again they cannot be blamed for. And having gained admission, do they gain anything else? As far as pharmaceutical remedies go, let it be granted that medical men are glad to know the virtues of a new remedy and to make use of it at the earliest opportunity—while, in the French aphorism, it still possesses curative powers: the question still remains as to the best method of conveying this knowledge. There can be no doubt that to disturb a man at his avocation and to deliver a discourse upon the subject when that same man is burning to be left alone is not likely to conduce to business. The travellers too often assume an air of omniscience. They talk glibly a jargon which they believe to be scientific and do so with a patronising manner which conveys the impression that they have not troubled to ascertain whether their victim has any special knowledge of the subject or any chance of utilising the materials which are dumped down in the consulting room. They appear not to have realised that the Medical Directory might suggest a different tone and that to lecture a man upon his own subject is an idle proceeding. The general practitioner is requested to try the article and to order large supplies, on the ground that the consulting practitioners are all deeply interested in the remedy. The consultant is solicited to record his experience and may be surprised to find subsequently his name, with a few remarks separated from their context, appended to the "literature" relating to the new remedy. We cannot believe that such procedures really lead to an increased sale of pharmaceutical products.

It is in general easy for the medical man to secure immunity from agents of insurance companies, of motor-cars, and of encyclopædias. The first named are usually too tactful to require harsh treatment; the others are generally speedily open to conviction of the futility of making an attempt to prolong an interview. They are all business men who recognise the danger of undue persistence. Some are even sufficiently considerate to send an advance letter and to take no further steps unless this is answered. This, however, is not the way with another class of unwelcome visitors, a class that is getting more and more frequent, and a class upon which it is undoubtedly hard for a medical man to shut his door. We refer to unemployed nurses, masseurs, *inasseuses*, and the managers of nursing and hygienic institutions of all sorts. The nurses who come in the hope of securing work; those who come to announce that they have opened a nursing home in the immediate neighbourhood and have ventured to secure an expensive staff and have gone to lavish outlay in adaptation of primarily unsuitable premises; those who have endeavoured to march with the spirit of the times and have fitted up elaborate apparatus for the use of light, heat, or electricity in therapeutics—all these in soliciting work from those to whom they are unknown are really wasting time on both sides, while demonstrating the sad need of employment which has only been realised after the period of training. But without a doubt the most difficult caller with whom the medical man has to deal is the foreign practitioner, and for obvious reasons his visits are usually made to the consultants of London. He is anxious to show his accurate knowledge of the English tongue and this knowledge is not always as perfect as he fondly thinks. He advocates the special baths, waters, or sanatoriums of his district; or, on the contrary, while conceding that open-air treatment is good for pulmonary tuberculosis, he argues at length on the evils of massing together so many sick people and advocates treatment in small private houses in his locality. With such views he is not, of course, connected with the sanatoriums the advertisements of which have made the locality known, but he is ready to profit by their notoriety. He is always polite and deferential, even while keeping the main object in view, and he deprecates any selfish motive in calling, while indicating how much the municipality or neighbourhood whence he hails has done for the sick sojourner. He is difficult because his host frequently has no means of gauging his professional status; his name is unfamiliar and yet he may be a man of light and leading in his own country and above all he is a medical man and must receive the cordiality due to a *confrère*. The unwelcome visitors of the medical man are large in number and various in sort. Whether what they effect bears any proportion to the strenuousness of their efforts or the irritation which they sometimes cause is doubtful.

MORETONHAMPTSTEAD HOSPITAL.—The annual meeting of the subscribers to Moretonhamptstead Hospital, Devon, was held on Jan. 23rd, the Hon. W. F. D. Smith, M.P., presiding. The medical report stated that 67 in-patients were treated, being an increase compared with the previous year. The financial statement showed that a favourable balance of £35 remained.

are, in the main, poisonous substances, and although the effect of very small doses may be inappreciable yet the presence of a poison in beverages in any quantity at all is highly objectionable. There is convincing evidence to show that saponin is prejudicial to health and therefore its use for the purpose of causing a beverage to foam is forbidden in the provisions of the Sale of Food and Drugs Acts. Saponin is prepared from the poisonous corn-cockle which is quite a common plant in our fields and often a source of considerable trouble to wheat farmers. Even if saponin were not poisonous the practice of making things not what they seem is fraud, and nothing but fraud, and even if perfectly innocuous substances are used for the same purpose the intention is obviously again to deceive and to produce a wretched imitation of the genuine article.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following are the arrangements for the annual course of lectures to be delivered at the College. The lecture hour is 5 P.M. The Hunterian lectures will be delivered by Dr. O. G. Seligmann, F.Z.S., on the Physical Anthropology and Ethnology of British New Guinea, on Feb. 12th, 14th, and 16th; by Mr. H. J. Paterson on Gastric Surgery, on Feb. 19th, 21st, and 23rd; by Mr. Arthur H. Ocheale on Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life, on Feb. 26th and 28th and March 2nd; and by Mr. J. Warrington Haward on Phlebitis and Thrombosis, on March 5th, 7th, and 9th. The Erasmus Wilson lectures will be delivered by Mr. James Sherren on the Distribution and Recovery of Peripheral Nerves Studied from Instances of Division in Man, on March 12th, 14th, and 16th. The Arris and Gale lectures will be delivered by Mr. J. H. Watson on the Viscosity of the Blood, on March 19th and 21st; and by Mr. Sydney W. Carl on the Arterial Pulse, its Physiology and Pathology, on March 23rd.

CONFLUENT VARICELLA WITH SECONDARY FEVER.

VARICELLA is generally an exceedingly mild disease but the rule is occasionally broken by the occurrence of serious complications, such as nephritis or gangrene. In the *British Journal of Children's Diseases* for January Dr. J. D. Rolleston has reported the following very rare case. A boy, aged five years, was admitted into hospital on Oct. 8th, 1903, with a typical attack of scarlet fever. General desquamation followed and the temperature subsided by lysis to subnormal on the 18th and remained so until the 26th, when it rose to 99° in the evening. On the next morning there were numerous papules and vesicles characteristic of varicella. At 10 P.M. the lesions numbered 160. At 11.30 A.M. next day the vesicles alone numbered 254. On the 29th they numbered 794. On the lower part of the back the eruption was confluent and on the limbs it was semi-confluent. Several of the lesions were multilocular and some showed umbilication. Most of the vesicles on the trunk ruptured, leaving a bleeding surface. The albumin in the urine, which had appeared a few days before the onset of the varicella, increased from a trace to a cloud. On the 30th the vesicles numbered 2185 and their distribution resembled that of confluent small-pox. There were oedema of the face and swelling of the fingers which increased this resemblance. The vesicles were distributed as follows: trunk, 574; genitals, 30; thighs, 511; legs, 197; feet, 185; arms, 394; hands, 147; neck, 93; face, 50; and scalp, 4. There were several lesions on the hard palate. Haemorrhage took place into a few of the vesicles on the left forearm, the right knee, and the left ankle. On the 31st desiccation and incrustation were commencing. Many of the vesicles had become pustules, especially on the back. On Nov. 2nd the temperature fell by crisis and for about a week it

remained normal. Desiccation was not complete until the 10th, when many of the scabs on the trunk had separated. Their copious exfoliation and the associated factor were additional points of resemblance to small-pox. From Nov. 9th to 19th there was pyrexia due to suppuration beneath the scabs, which on separation left punched-out ulcers. By Dec. 4th all the scabs had separated and the child was discharged in good health on the 10th. The skin presented numerous scars showing various degrees of pigmentation. Very few cases of confluent varicella have been recorded. The absence of prodromal symptoms, the appearance of fully developed vesicles on the first day, the successive crops, and the shape of the lesions proved that the disease was varicella. The vesicular hæmorrhages entitled the case also to be termed hæmorrhagic varicella. Secondary fever in varicella has been described particularly by French writers.

THE MODE OF PRODUCTION OF SILK-WORM GUT.

AN interesting account of the history and mode of production of silkworm gut has been published by M. J. Triollet in the *Bulletin des Sciences Pharmacologiques* (1905, No. 5). It is obtained from the silk-producing glands of *Bombyx mori* at the time when the larva commences to spin. It has been known from very early times but was used for fishing purposes only until 1865, when Dr. Passavant of Frankfort-on-Main employed it in surgery. His example was later followed in this country by Mr. T. Bryant and Dr. Granville Bantock. Mr. Bryant, in the edition of his "Surgery" published in 1874, mentioned his experiences in the use of this ligature and recommended it for "quill sutures." Dr. Bantock employed the gut at first as a ligature for arteries and then as a suture. Silkworm gut is tenacious, flexible, and easy to tie in a surgeon's knot, and does not cut the tissues as is the case with metallic threads. Owing to its smooth surface it can readily be sterilised and removed from the patient without causing undue pain. It is rarely employed, however, as a buried ligature, being almost exclusively used as a suture owing to the impossibility of making with it so tight a knot as with silk or catgut. Although Italy produces large quantities of silkworm gut for fishing the surgical thread comes chiefly from the province of Murcia in Spain. The manufacturers supply the peasants with boxes containing an ounce of the eggs, sufficient to produce about 40,000 silkworms. These are hatched during April and May when the mulberry leaves begin to appear. The incubation occupies seven days at a temperature of from 22° to 30° C. The silkworms are microscopical at first and attain their full size in 24 days, moulting four times in succession. The longest and most vigorous are then set apart and carefully watched. When they manifest signs of beginning to spin they are killed by plunging them in a large tub of water acidulated with vinegar or citric acid, in which they remain from 12 to 15 hours. The dead silkworms are then taken one by one by women, who make a longitudinal incision along the back and carefully withdraw the intestine, stomach, œsophagus, and probably the greater part of the muscular and vascular tissue. They then isolate the two silk-producing glands and wash them with hot water. The glands are then manipulated by women specially skilled in the work who hold each gland by its ends and draw it out so as to produce one thread which is placed on a polished marble or granite table. In contact with air the thread rapidly dries and acquires a more or less blood-red yellow colour. This crude silkworm gut is then sold to the manufacturer and further treated. It is first boiled in alkaline water to remove fat and blood and is then dried in the sun, being protected from dust. It is next polished by means of slightly oiled pumice stone with an apparatus the secret of

all acute diseases. He never allows the ingestion of a morsel of any sort of food except water, or perhaps a little orangeade or lemonade, until the patient is practically convalescent. To milk he decidedly objects. Adults should have from two to four ounces of water at intervals varying from half an hour to two hours according to the amount and appearance of the urine. The water is given moderately hot and always with a placebo in some of the portions. Among his patients therapeutic fasts of five, eight, and ten days are not uncommon.

CANARDS AND CONSEQUENCES.

Mr. O. A. Ballance has recently had occasion to address a letter to the editor of the *Daily Mail* calling attention to the inconvenience that had been caused him by the insertion in that paper of a false statement that he had performed an operation upon the German Emperor. The editor of the *Daily Mail* inserted a correction without any apology for the mistake, giving Mr. Ballance's initials wrongly. We consider that Mr. Ballance has received scant courtesy from the *Daily Mail*. We saw the false paragraph, which we are informed was widely quoted, and we sympathise with Mr. Ballance in the disagreeable situation produced by its complete and reckless inaccuracy. In some of the versions of the story imagination went so far as to induce the writers to lay stress upon the great jealousy shown by German medical men towards English practitioners—an untrue special incident being used for the foundation of an untrue general conclusion. The most generous kindness is always shown to English medical men in Germany and in times when racial feeling is being used in many directions for political purposes such misrepresentations are particularly unfortunate.

DISSECTING ANEURYSM INVOLVING THE WHOLE AORTA.

DISSECTING aneurysm of the aorta is generally considered to be necessarily fatal. At the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 29th, 1905, M. Maurice Letulle reported the following remarkable case which demonstrated that this condition may be compatible with life. A woman, aged 45 years, was admitted into hospital on August 5th, 1904. While in good health she was seized with breathlessness and a permanent feeling of constriction of the chest. She was taken to hospital in a state of grave dyspnoea. The precordial pain was not intolerable and did not suggest angina pectoris. The dyspnoea, though well marked, was not accompanied by polypnoea or cough. The face was pale and had an expression of pain. The apex beat was strong and situated in the sixth intercostal space, about 12 centimetres from the middle line, denoting hypertrophy of the left ventricle. A thrill was felt at the base of the heart and in the great vessels arising from the aortic arch. The aortic arch was enlarged and pulsated energetically in the suprasternal notch. Percussion showed that its right border was three centimetres from the right border of the sternum. There were a double aortic murmur, Corrigan's pulse, and capillary pulsation in the nails. The urine was increased in quantity and contained a little albumin. The evident dilatation of the aortic arch and its branches led to the diagnosis of chronic aortitis complicated by valvular insufficiency. The patient's age suggested that the condition was due to syphilis. She had been pregnant seven times. The two eldest children were living and in good health. The next four had died at an early age and the last pregnancy terminated in abortion at the third month. Under rest, a milk diet, blood-letting, and theobromine the patient improved. After a fortnight slight hæmoptysis occurred and the dyspnoea and precordial pain returned. The diagnosis of aneurysm

was then entertained. Five days later the hæmoptysis recurred. In the meantime paralysis of the inferior part of the right facial nerve appeared. Towards the end of August there were cardiac irregularity, dyspnoea, oliguria, and increasing weakness, and the patient constantly complained of neuralgic pains in the flanks. Death occurred on Oct. 26th. The necropsy showed considerable hypertrophy of the heart. All the valves were normal. The aortic arch was much dilated but showed no sign of aneurysm externally. The surrounding cellular tissue was thickened and sclerotic (chronic peri-aortitis). Contrary to expectation, the aortic valves were normal and competent. An extraordinary condition of the aorta was found. A dissecting aneurysm extended along its whole length and also along the innominate artery to its bifurcation. The aneurysm originated in an orifice, of about the size of a 50-centime piece, situated three millimetres above the aortic valves. At the bifurcation of the abdominal aorta it terminated in another orifice, a transverse slit five or six millimetres long. Thus during life the circulation of the blood took place through the aneurysm. This "accessory aorta" was about 35 centimetres long, its calibre, except at its origin and termination, was equal to that of the thumb, its lining was smooth, and its cavity was empty, not containing even a trace of clot. Microscopic examination showed typical rupture of the elastic coats of the aorta into which the blood had percolated following certain pre-existing planes of cleavage. The irritation caused by the forcing of the blood into this "interstitial wound" had led to the formation of a new coat of connective tissue, extremely thick. Thus the resistance and permeability of the new channel were secured. M. Letulle thought that the exit furnished to the blood at the termination of the aorta was a "spontaneous cure," as the condition established was compatible with life. The other lesions found confirmed the hypothesis of syphilis. The spleen contained a large infarct, the result of old arteritis. The kidneys were cirrhotic and showed end-arteritis. Similar changes were found in the vessels of the brain which were profoundly atheromatous.

FRAUDULENT FOAM.

FOAM is an undoubtedly attractive feature of many beverages which finds, perhaps, no better illustration than in the case of beer. Generally speaking the formation of foam on the top of beer is an indication that the beer is brisk as opposed to its being flat and stale, and since briskness is a wholesome quality of beer the appearance of a "head" upon its surface may be taken to be a sign that the beer is both palatable and suitable for drinking purposes. It is customary when pouring out beer from the jug to the glass to encourage the formation of foam by elevating the jug during the process so that the beer is gently splashed into the glass. If, then, foam is an indication of sound quality in genuine beer it seems to us to be a serious deception to manipulate a flat and possibly unsound beer with a "foaming mixture." The presence of a slight excess of carbonic acid gas in beer which gives to it a mild effervescent character is of distinct importance as a dietetic factor. Without this effervescence beer is prone to be indigestible and a beer-drinker instinctively avoids this beverage when it is "flat." The addition of a "foaming" mixture to beer therefore is calculated to destroy a useful and valuable means of discrimination and the consumer is thus not only deceived but his health may also be prejudiced by artificial foam. One, at any rate, of the substances employed to give a foam to aerated waters, and we have little doubt to beer as well, is saponin, very small quantities of which when added to water impart to it a frothy character. Now saponin is a glucoside, and glucosides

appliances in the production of which British manufacturers have held the first place would serve as useful object lessons, particularly as in Italy there is a growing market for these health-protecting products. This will be the first international exhibition of hygiene ever held in Italy and it should prove an excellent opportunity for showing how hospitals, sanatoriums, factories, workshops, private dwellings, and public buildings can be equipped with appliances for draining, warming, or ventilating such places in a satisfactory manner. The exhibition will be open from April to November this year and already more than a hundred national and international congresses are announced as about to meet at Milan during this period; one of these congresses will be devoted to the question of tuberculosis.

UNIVERSITY COLLEGE, LONDON.

A COURSE of eight lectures on Physiological Optics is being given in the physiological department of University College by Mr. J. Herbert Parsons on Fridays, at 5 P.M., the first lecture having been delivered on Friday, Jan. 26th. The syllabus is as follows. Lecture I.: Elementary optics—reflection, mirrors, refraction, prisms, and lenses. Lecture II.: The eye as an optical instrument—the homocentric system and the dioptric system of the eye. Lecture III.: Ophthalmometry. Lecture IV.: Ametropia—myopia, hypermetropia, astigmatism, and aphakia. Lecture V.: Ophthalmoscopy and retinoscopy. Lecture VI.: Visual perceptions—light sense, colour sense, and form sense. Lecture VII.: Accommodation and binocular vision. Lecture VIII.: Muscle balance and strabismus. The lectures are open to all students in London medical schools and also to qualified medical men on presentation of their cards. Professor E. A. Minchin will commence on Monday, Feb. 5th, a course of lectures on Parasitic Protozoa. Professor Minchin has recently returned from Uganda, where he has been engaged, as one of the special commissioners of the Tropical Diseases Society of the Royal Society, in research on the life-history of the trypanosome of sleeping sickness.

MEDICAL PRACTITIONERS AND THE NOTIFICATION OF INFECTIOUS DISEASES.

AN action recently brought against Dr. Louis Stamm, practising at Streatham, for negligence illustrates the extreme hardship imposed upon medical men by the law which lays them open to prosecution if they delay in notifying, or fail to notify, cases of dangerous infectious disease, while it affords them no protection against patients who consider themselves aggrieved by the notification should the diagnosis not be confirmed at the isolation hospital. In the case of Dr. Stamm a female patient, who had eaten shell-fish at Margate, became unwell, and after he had attended her for ten days he notified her case as one of typhoid fever. She was detained at the South-Western Fever Hospital for 17 days and there at some period subsequent to her admission the opinion was arrived at that her condition was due to influenza and not to typhoid fever, of which she became aware before, or at the time of, her discharge, with the result that she brought an action against Dr. Stamm founded upon his alleged mistake. There was no evidence whatever that he had been negligent and the medical officers of the hospital called on behalf of the plaintiff naturally and properly expressed their opinion that the defendant's conduct in notifying the case as one of typhoid fever had been perfectly correct. Dr. F. F. Gaiger, the medical superintendent of the hospital, who had been absent and had not himself made the diagnosis of influenza, was a witness and said that, having heard the story of the shell-fish and of the symptoms which the plaintiff was stated to have exhibited, he considered Dr. Stamm to have acted rightly in notifying that she

was suffering from typhoid fever. It was, in fact, a doubtful case and quite possibly was one of typhoid fever after all. The damage suffered by the plaintiff was apparently described as nervous shock due to her detention in the hospital and injury to her property occasioned by the disinfection of her flat. In these circumstances it is not surprising that the county court judge, the Hon. Arthur Russell, stopped the case without the defendant being called upon to make good his defence, and he is to be congratulated upon having done so firmly and decisively in such terms as left no doubt as to his view of the plaintiff's conduct. He also marked his sense of this by ordering the costs to be paid on what is known as the Q Scale, so that so far as possible the defendant will be indemnified for his necessary expenditure in resisting the claim against him. Perhaps Dr. Stamm would have preferred the opportunity of justifying his diagnosis in the witness-box but, be this as it may, the real lesson of the case lies in the fact that he had to undergo all the anxiety and expense of preparing his defence, however shadowy or non-existent the case of the other side might be. It is submitted to the good sense of the community that in its own interests and in those of justice actions such as this should not be permitted and that the medical man should be absolutely protected until a strong *prima facie* case can be made out against him, pointing not to erroneous diagnosis but to negligent and unskilful conduct resulting in a mistake which the exercise of ordinary professional skill and care would have prevented.

FEEBLE-MINDEDNESS IN CHILDREN.

THE growing literature upon the subject of the feeble-minded is indicative of the increasing interest which is being taken in this matter by medical men and educationists. There is abundant scope for the collection of scientific data in respect to the history and diagnosis of cases of feeble-mindedness in children upon which to found a rational system of education and care. To this subject Dr. C. Paget Lapage makes a contribution in the *Medical Chronicle*, 1905, based upon the examination of 253 feeble-minded children of Manchester who were pupils or would-be pupils of special schools, inmates of the home of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, or patients at the Children's Hospital, Manchester. The following were the etiological factors most commonly noted in these cases: a history of non-epileptic convulsions or one of epileptiform convulsions in the child; a family history of tuberculosis, of feeble-mindedness, of insanity, or of epilepsy; a parental history of alcoholism; and a maternal history of some abnormality during pregnancy. The various factors were usually found in combination. In regard to physical anomalies in the feeble-minded child Dr. Lapage found that out of 200 children examined 181, or 90.5 per cent., exhibited various "stigmata of degeneration." These are stated to occur much more frequently in the feeble-minded than in ordinary children and usually in combination, whereas in the ordinary school child single defects are more common. The question of the frequency of occurrence of such stigmata in the insane and mentally defective, as compared with normal individuals, and of the relative significance of the various stigmata is in need of elucidation. There is here a wide field for inquiry. In the cases recorded the head appears to have been examined more especially and attention is drawn to the frequency of occurrence of the following conditions: smallness of the maximum circumference, asymmetry, deficiency of the posterior part of the skull as compared with the anterior, defects of the external ear, and defects of speech and of facial expression. "Fetural" defects are stated to be hard to classify or to describe but are regarded

which is jealously guarded. The gut is then bleached with sulphurous acid and rubbed vigorously with chamois leather to remove dust and sulphur. The threads are finally sorted according to their thickness into five grades, varying from a tenth to half a millimetre in thickness. These five grades are known respectively as "very fine," "fine," "medium," "thick," and "extra thick." The two extreme sizes are rarely used. The fine threads should resist a mean pull of 2.5 kilogrammes, the medium threads 4 kilogrammes, and the thick threads 6 kilogrammes. A length of from 30 to 32 centimetres is suitable for surgical use. The gut is coloured by soaking for an hour or two in a solution of fuchsine or methylene blue and subsequently by washing thoroughly to remove excess of dye. In order to render it supple it is immersed for about six weeks in an antiseptic solution, usually a solution of phenol containing a little glycerine. Finally, the gut is sterilised in closed flasks containing an antiseptic solution in an autoclave at a temperature of 120° C. for half an hour. Silkworm gut so prepared varies much in quality, according to the thoroughness of the treatment to which it has been subjected. It loses its firmness on keeping. The annual production of silkworm gut in Spain is about 150,000,000 threads, the preparation of which provides employment for from 4000 to 5000 persons; the total value amounts to from 2,000,000 to 3,000,000 francs.

MEDITERRANEAN FEVER IN SOUTH AFRICA.

WE have received a reprint of a paper by Lieutenant-Colonel O. Birt, R.A.M.C.,¹ in which he concludes that Mediterranean fever is now endemic in certain parts of the Orange River Colony and that its further spread is likely to occur. Attention was drawn to the matter by some observations of Dr. P. D. Strachan² of Philippolis, Orange River Colony, on 72 cases of prolonged pyrexia which came under his care during a period of 18 months. The clinical features of the cases suggested to him the diagnosis of Mediterranean fever and in order to confirm this view he sent blood from 34 of his cases to the Government laboratories in Cape Town and Grahamstown. Of these, 25 gave an agglutination reaction with cultures of the micrococcus *Melitensis* in dilutions varying from 1 in 10 to 1 in 50. These results were the more remarkable since, apart from imported cases of Mediterranean fever, none of the cases of prolonged fever in the military hospitals at Harrismith, Bloemfontein, and Pretoria have suggested that disease, and in all the cases in which agglutination tests have been made with the micrococcus *Melitensis*, the results have been negative where trustworthy cultures have been used. It is well known that cultures which have been isolated for some time give results which cannot be relied on, since they become much too sensitive to the agglutinins present in normal blood. On the other hand, Colonel Birt and Captain G. Lamb³ have shown that with recently isolated cultures a complete reaction at a dilution of 1 in 10 or over implied Mediterranean fever past or present, and further, that this agglutinating power persists for months, or even years, after the disease has subsided; in one of these cases they obtained the reaction seven years after the attack. In order to subject Dr. Strachan's cases to a more stringent test Colonel Birt obtained samples of blood from a number of them and tested them with progressive dilutions of recent cultures and in every case he obtained a positive reaction, in some of them with dilutions of 1 in 1000. He therefore concludes that all these cases were actually Mediterranean fever. Dr. Strachan's partner, Dr. D. M. Macrae, has informed

Colonel Birt that he has seen similar cases in Fauresmith and Koffyfontein, and Springfontein and Bethulie have also presented cases of the disease. Dr. Strachan is of opinion that infection has been spread by goat's milk which is largely used in these districts. The subject is one which requires further investigation, since if this disease proves to be endemic in these districts it will be necessary to take active measures to prevent its spread. The actual demonstration of the organism in the blood of these cases has apparently not yet been made and Colonel Birt very rightly suggests that a search for it should be undertaken in doubtful cases of fever in the district.

WHAT IS WHISKY?

THE proceedings at the North London police court last Monday furnished very little evidence that could be said to be of particular interest or to possess any fresh feature. Sir James Dewar was recalled and gave some figures relating to the effect of age on whisky. He said that experiments showed that the longer a whisky was kept in wood the greater the increase in the impurities. (Readers of THE LANCET may remember that this fact has been pointed out in our columns as the result of a number of analyses made in THE LANCET laboratory.) In cross-examination Sir James Dewar admitted that for drinking purposes whisky was better for being older. Mr. William Sanderson, representing the North British Distillery Company, Edinburgh, said that to their customers they described patent-still spirit as grain spirit and pot-still spirit as whisky only. Asked whether he would have any objection to stating on the bottle that whisky is pot-still or grain, as the case may be, the witness thought that it might be done but that it "would not always convey anything." The difficulty would be to exercise control over the publican who bought the whisky in bulk. This witness agreed with another distiller that the public knew very little as to how or from what materials whisky was made. The hearing was again adjourned.

HYGIENE AT THE MILAN INTERNATIONAL EXHIBITION.

THE International Exhibition by which it is intended to celebrate the opening of the Simplon Tunnel was first meant to illustrate the past history and the modern development of the means of transport. Even this restricted programme included several questions of great interest from the point of view of health. The most obvious of these is the warming and ventilation of railway carriages. Then there is the great problem of food-supply—that is, the transport of live cattle and the railway cold storage cars for fish, meat, vegetables, beer, and other alimentary substances; medical examination, quarantine, disinfection of passengers and cattle vans and wagons—all these and many other public health problems form part of the general question of transport and travelling. But the programme has been enlarged. The exhibition will be held at Milan. An area of 840,000 square metres is secured and about a quarter of this space will be built upon. Here visitors will find what promises to be an attractive fine art section. Then there are sections on decorative arts and a working hall for industrial arts. There will be sections for agriculture, fishery exhibits, meteorology, aeronautic exhibits, social reform organisations, public hygiene, and, finally, a special exhibition of all that relates to the multifarious endeavours made to reduce the prevalence of pulmonary tuberculosis. The Italian executive committee, we are informed, is especially anxious to give great prominence to all questions connected with tuberculosis and to secure international coöperation in bringing forward all that bears upon the subject. The sanitary

¹ Journal of the Royal Army Medical Corps, January, 1906.

² South African Medical Record, August 15th, 1904; Brit. Med. Jour. July 15th, 1905.

³ THE LANCET, Sept. 9th, 1899, p. 701.

Limits are 15 minutes for a discourse and five minutes for either a demonstration or a speech at a discussion. The reading of printed or written matter is only allowed by special permission of the president.

THE CLIMATE OF ST. MORITZ.

WE have received a pamphlet with the above title and written by Professor A. Nolda, one of the resident physicians at St. Moritz, with the collaboration of M. C. Bühler, director of the Swiss Meteorological Station, Montreux. It is pointed out that the particulars previously published regarding the climate of St. Moritz have been chiefly based on observations made at Sils-Maria and Bevers, there being no continuous meteorological records for recent years at St. Moritz, but both the places named, especially Bevers, have a climate different in important respects from that of St. Moritz. Some interesting details are afforded in respect to the atmospheric pressure at St. Moritz, the temperature of the air, the relative moisture, the rainfall, overclouding and insolation, the duration of sunshine, and the prevailing winds. The pamphlet ends with words which we hope will not be substantiated by those responsible for the management of internal affairs at St. Moritz: "In one point St. Moritz has, with sagacious foresight, itself restricted and narrowed its indications—*St. Moritz declines to become a sanatorium for consumptives and will therefore not receive any patients suffering from tuberculosis of the lungs.* We sincerely trust that this wise decision, so necessary for the further development of St. Moritz, will be strictly carried out!" (The italics are as they appeared in the pamphlet.) We are of opinion that a great mistake will be made if such proposals are actually brought into force. Not only will a valuable therapeutic measure be denied to sufferers from tuberculosis but we believe that the authorities responsible for the enactment will have cause to repent their action. The climatic conditions of St. Moritz are admirably suited for the treatment of tuberculosis and there is no trustworthy evidence that the assemblage of patients suffering from the disease in any way affects the health of the community if suitable arrangements are made for the disposal of the sputum.

THE MEETING OF THE BRITISH MEDICAL ASSOCIATION IN TORONTO.

OUR Canadian correspondent writes:—The medical profession in Toronto is working hard to secure a successful meeting for the British Medical Association in that city from August 21st to 25th. The various committees are doing all in their power to make everything run smoothly and Dr. Reeve, the President-elect, of the medical faculty of the University of Toronto, has the loyal support of his colleagues. The honorary local secretaries are Dr. F. N. G. Starr, Dr. D. J. Gibb-Wishart, and Professor J. J. McKenzie, and anyone who desires any special information should apply to them at the Medical Building, Queen's Park, Toronto. It has been announced that the address in medicine will be delivered by Sir James Barr and the address in surgery by Sir Victor Horsley. The scientific part of the meeting will be conducted in 12 sections. Those going to Toronto will be assured of an enjoyable visit and afterwards they may judge of Canadian hospitality. The city has several fine hotels and the accommodation will be first-class. There will be excursions to Niagara Falls, to Muskoka, and to the Rocky Mountains. The last are nearly 3000 miles away but Canadians think nothing of that. The climate is the equal of any in the world. Toronto itself is an exceptionally fine city; its weather is delightful and this season there has not so far been any snow. It has numerous fine public buildings, a beautiful harbour and island resort, as well as steamboat

connexion with all the prominent health resorts. Intending visitors may be recommended to see Halifax, the Annapolis and the Matapedia valleys in the Maritime provinces; Quebec city and Montreal and the noble St. Lawrence in the province of Quebec; Ottawa, the capital, with its Parliament buildings; the Thousand Islands, Toronto, and Niagara Falls in Ontario; Port Arthur, Winnipeg, and the great wheat belt of Manitoba; and the Rocky Mountains, Vancouver, and Victoria in British Columbia.

THE medical officer of health of Cape Colony reports that for the week ending Dec. 30th, 1905, the condition of the colony as regards plague was as follows. No case of plague in man or other animal was discovered anywhere throughout the colony except at Port Elizabeth, where 2 plague-infected mice were found. For the week ending Jan. 6th, 1906, the colony was also free from plague except for 1 plague-infected mouse at Port Elizabeth. As regards the Mauritius a telegram from the Governor received at the Colonial Office on Jan. 26th states that for the week ending Jan. 25th there were 1 case of plague and 1 death from the disease.

A COURSE of ten lectures on the Physical Chemistry of Colloids (with special reference to immunity) is being delivered at the London Hospital Medical College, Mile End, E., on Fridays at 4.30 P.M., by Dr. J. A. Crow (British Medical Association Research Scholar). Lecture III., which will be delivered to-day (Friday, Feb. 2nd), will deal with various properties of colloids, ultramicroscopic investigations, diffusion and filtration phenomena, and the influence of light, heat, and electricity. Any member of a London school of medicine may attend this course.

THE Lettsomian lectures for 1906 of the Medical Society of London, on Some Points in the Surgery of the Brain and its Membranes, will be delivered by Mr. Charles A. Ballance, on Feb. 5th and 19th and March 5th, at 9 P.M. Lecture I. will deal with Some Points in the Surgery of Meningitis, Lecture II. with Some Points in the Surgery of Brain Abscess, and Lecture III. with Some Points in the Surgery of Brain Tumour. The lectures will be illustrated by lantern slides.

AN International Congress of Laryngology and Rhinology is announced to be held at Vienna in 1908, the date, already selected, being from April 21st until the 25th (Easter week). The date is selected as it is the fiftieth anniversary of the establishment by Türk and Czermak of a course of systematic study of laryngology in Vienna.

THE first of a course of lectures on Food and Nutrition will be delivered at the Royal Institution, Albemarle-street, W., on Tuesday, Feb. 6th, at 5 P.M., by Professor William Stirling, Fullerian professor of physiology at the Institution.

BY the will of the late Mrs. Gant, the wife of a former president, a sum of £100 has been left to the Medical Society of London.

A FEW REMARKS UPON THE REPORTS OF THE MALTA FEVER COMMISSION.

BY G. MURRAY LEVICK, M.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON, ROYAL NAVY.

THE Government Commission on Malta Fever working at Malta under the supervision of the Royal Society has issued three important reports which have been read with great interest by all who have studied the disease. There are, however, some points which require discussion in connexion with the theory, to which Surgeon E. H. Ross, R.N., and I

as constituting one of the most common and noticeable of the abnormalities exhibited by feeble-minded children, and their combined effect is thought to constitute one of the greatest aids to diagnosis. The inquiry further showed that the feeble-minded are smaller and more poorly developed physically than ordinary school children, the disparity increasing with age.

HONG-KONG COLLEGE OF MEDICINE FOR CHINESE.

THE Hong-Kong College of Medicine for Chinese was founded in 1887, largely through the efforts of Sir Patrick Manson, Mr. James Cantlie, the late Rev. Dr. Chalmers, and the late Dr. William Young, for the purpose of teaching medicine, surgery, and midwifery to Chinese and such others as might avail themselves of the instruction given. The College has its headquarters in the Alice Memorial Hospital and the affiliated Nethersole Hospital is also open to students for purposes of clinical study. Students before matriculation must pass a preliminary examination in English, Latin, or classical Chinese, geography, elementary mathematics, and one modern language. The course of study extends over five years and includes more subjects than were required in English schools 50 years ago; the examination papers are also quite up to the English standard of that day and moreover contain questions on such quite modern topics as the treatment of appendicitis, the microbial pathology of various diseases, the examination of blood-stains, sphygmography, the theory of chemical valency, and the respective significance of free and albuminoid ammonia in drinking-water. Candidates on passing receive the diploma of Licentiate in Medicine and Surgery of the Hong-Kong College of Medicine for Chinese (L.M.S.H.). The teaching staff includes 16 lecturers, of whom 13 hold British qualifications. There were 35 students on the roll in December, 1905, and five diplomas were granted during the year then completed.

PATHOLOGICAL GLUTTONY.

THE literature of depraved appetites is considerable and is discussed at some length in Gould and Pyle's "Anomalies and Curiosities of Medicine." Morbid appetite most commonly manifests itself in the tendency to eat filthy or loathsome food, and this tendency again is allied to fetish worship. Many savages, for instance, consume their own excrements and assign ritual or religious reasons for this act. The human urine and faeces are by them regarded as containing the soul, and to devour them is to become repossessed of a sacred trust. That form of savage cannibalism which enjoins the eating of kinsmen and parents is based on the same grounds of reasoning. It is a question, however, whether cannibalistic and ordure-eating savages do not really derive their instincts from the lower animals. Dogs have notoriously depraved appetites. Some famous gluttons have certainly seemed to be casts-back to the lower carnivora. Such was "the Great Eater of Kent," affectionately eulogised by Taylor the Water-Poet. This Man of Kent was seen by Taylor to make a meal of a whole calf. He was admired in his day as a supreme instance of a jolly fellow, but his feats were such as to suggest the morbid and abnormal. Tarrare, a Frenchman, who died at Versailles, aged 26 years, during the latter half of the eighteenth century, was perhaps the most prodigious and revolting of those instances of what might be called pathological gluttony. He ate "a quarter of beef in 24 hours," and could quickly assimilate large serpents. Lorenze saw him devour a cat, the hairs of which he voided after an interval of half an hour, much as a bird of prey might do. This man was manifestly a reversion to type. Of his family, although less sensational in their cravings, are the earth-eaters, wood-eaters, chalk-peat, bog-, insect-, and perhaps even seaweed-eaters, while

the chewers and the whittlers may be said to belong to the same morbid category.

THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

AN important and valuable innovation is proposed to be introduced at the Hospital for Consumption and Diseases of the Chest, Brompton. A joint sub-committee of the committee of management and of the medical committee has been appointed to draw up a scheme whereby it is hoped the economic value of the hospital may be considerably increased. At the present time a lady almoner is appointed to attend in the out-patient department in order to render assistance in various ways to those patients who require it. It is now proposed to extend this department and so to make an endeavour to reach the patients in their own homes, to superintend the hygienic precautions which are necessary to prevent the spread of tuberculosis, and to make inquiries as to the state of health of those members of the patients' families who are dwelling in the same house. It is suggested that patients should be invited to bring other members of their families to the hospital so that they may be examined for evidences of tuberculosis. By pursuing such measures as these the work of the hospital will be rendered even more valuable than it is at present. As we have frequently pointed out, it is only by educating the public in the elementary laws of hygiene that any satisfactory stand can be made against the spread of tuberculosis. We trust that the endeavours which the Brompton Hospital hopes to make in this direction will be generously supported by the public, for considerable expense will be incurred if the proposals now being considered are to be carried out in a thoroughly satisfactory manner.

THE GERMAN SURGICAL CONGRESS.

THE thirty-fifth congress of the German Surgical Society will be held in Langenbeck House, Ziegelstrasse, Berlin, from April 4th to 7th. Members who by March 20th have paid their subscriptions for 1906 to Herr Melzer (Berlin N., Langenbeckhaus, Ziegelstrasse, 10/11) will receive their cards of membership by post. These cards may also be obtained at Herr Melzer's office in Langenbeck House on April 3rd and 4th but it is recommended that they should be procured in advance. The proceedings will commence with a general meeting for the transaction of miscellaneous business at 10 A.M. on April 4th and there will be a second general meeting in the afternoon of April 6th. Intimations of discommodities or demonstrations should be sent not later than March 3rd to Dr. W. Körte (Berlin W. 35, Potsdamerstrasse 39), together with a short synopsis and a precise statement whether a discourse or a demonstration is intended. Communications arriving at a later date can only be accepted if time permits. Patients arriving from abroad can be accommodated in the Royal Surgical University Clinic, Nos. 5-9, Ziegelstrasse. Preparations, apparatus, and instruments should be sent to Herr Melzer at Langenbeck House. An evening will be set apart for demonstrations of the Roentgen rays if sufficient material is forthcoming. The Congress dinner will take place on April 5th at the Savoy Hotel, Friedrichstrasse. Intending members should communicate with Dr. W. Körte, sending introductions from three members, and will be admitted at a committee meeting to be held on April 3rd. The following subjects have been selected for discussion at the Congress: (1) questions in military surgery, illustrated by the experience of the Russo-Japanese war; (2) the surgical treatment of ulcer of the stomach; (3) the further development of a high operation in cancer of the rectum; and (4) Bier's method of treating acute inflammation by vascular engorgement. The time

The smallest amount of blood from which the Commission succeeded in isolating the micrococcus is, according to its account, $\frac{1}{10}$ th of a cubic centimetre, or approximately four cubic millimetres of blood. I do not, however, agree that this excludes the possibility that the disease can be conveyed to a mosquito in a smaller quantity of blood. On the contrary, it seems obvious that the mosquito has only sucked up enough blood to convey one micrococcus to its stomach in order to transmit the disease and I would suggest that the scarcity of micrococci in the blood of patients (which is not after all very great) explains why the disease is not contracted by everyone who comes to Malta, as patients are nearly always bitten by hosts of mosquitoes. It is to be noticed that later in the report this escape of the many is mentioned as an argument against the mosquito theory of transmission but, as I have shown, it is really just as strong an argument in its favour. I think also that a mosquito may on occasion suck up more than four cubic millimetres, while, lastly, it is obvious that if a hundred mosquitoes bite a patient suffering from Mediterranean fever, which surely often happens, the total amount of blood abstracted by them is likely to be much more than the four cubic millimetres and may possibly amount to several hundreds of cubic millimetres, so that in this case not one but many of the insects may become infected.

I now come to Part II. of the report. On p. 43 we read: "Milk is not so closely connected with water in Malta as it is in most other countries, because the great majority of people get their milk-supply in their own vessels direct from the goat." I do not understand why vessels should not become contaminated by the water in the homes of the populace as much as vessels do in the dairies of other countries. Experience of the lower orders in Malta goes to show that they are not much more cleanly in their habits than the average goat and we read in the report of the Commission that in one house the occupants used the same bucket for washing the vegetables as they employed for carrying their excreta to the midden.

In Part III., at p. 37, we read that monkey No. 43 was repeatedly given hypodermic injections of broth growth from the breaths of Malta fever patients. The injections were frequently given from Oct. 27th to Dec. 4th. The blood of the animal was repeatedly tested for agglutination reaction with micrococcus *Melitensis* during the period of the experiment. I make the following extracts:—

On 7th of November doubtful tendency to agglutination. $\frac{1}{10}$ $\frac{1}{10}$; on 12th somewhat alling, on 22th slight agglutination reaction. $\frac{1}{10}$ $\frac{1}{10}$; on 5th of December tendency to agglutination in $\frac{1}{10}$ dilution, on 12th no agglutination reaction; on 15th dying, gave chloroform. P.M. Pneumonia and pericarditis. Inoculated slopes from all organs.

23rd December no M.M. recovered p.m., but a glucose fermenting + Gram staining coccus was obtained from spleen, liver, and kidneys, nothing from heart's blood and lungs.

In the remarks upon this experiment we read: "There is to be noticed in both these animal experiments the development of a low agglutination reaction and here, as in the skin experiments, I should attribute this to the ingestion of *M. Melitensis* toxins, as a certain amount of saliva trickled down the long entry tube and so into the broth." I would here point out, whilst admitting the possibility of the above conclusion being the right one, that it has been shown that agglutinins are not entirely specific in their action—i.e., that, in some cases at any rate, treatment with a particular organism may increase the agglutinating power as affecting other varieties of germs (Bouquet).

In the above experiments the broth injected was shown to contain germs other than the micrococcus *Melitensis* and the effect of injecting them was seen to be so marked at the post-mortem examination of monkey No. 43 that it is hardly surprising to read that in the serum of the animal the agglutinating power was increased sufficiently to act with a dilution of 1 in 20 upon the micrococcus *Melitensis*.

I might add, in conclusion, that Surgeon Ross and I have frequently suggested to members of the Commission that the true agent of infection is very probably the mosquito *Anopheles Zambesi*. Our experiments, observations, and arguments which lead to this conjecture are given in our paper in the *British Medical Journal* of April 1st, 1905, and the *Journal of the Royal Army Medical Corps* for August and September, 1905. It seems a pity that experiments have not been thoroughly undertaken to prove whether or not *Anopheles Zambesi* is the real agent of

THE WINES OF THE GIRONDE WITH SPECIAL REFERENCE TO CLARET.

THE statement which appeared in an annotation in THE LANCET¹ a little over a year ago that "Bordeaux wines or clarets were never cheaper, more abundant, and purer than they are in the present day" proves to be well founded in view of the results of a practical inquiry which we have recently undertaken. It is somewhat remarkable, therefore, that the belief still gains currency that the bulk of the claret sold at the present time in this country is too cheap to be good and that the genuine produce of the Médoc can only be obtained at relatively high prices. In giving an immediate answer and denial to this we may as well state at once that we have purchased wines in the open market, in London at all events, at wine merchants, stores, and grocers' shops at prices varying from 1s. to 3s. a bottle which have proved to be not only genuine but wines of excellent quality also. It is, indeed, highly probable that as a matter of fact the best value in regard to wines at the present time is to be obtained in clarets.

As we shall presently point out, the public, speaking generally, either has uncertain views about claret or, and this is worse, regards it as being deficient in that stimulating power which is only too freely found in strong fortified wines or spirits. The view is unfortunately too commonly held that the most trustworthy form of stimulant is whisky or some other spirit and that these contain alcohol in a pure and harmless form; therefore it is thought that in the choice of a stimulant it is safer to avoid a light wine the origin and genuineness of which are open to doubt. It is probable also that the use of light wine as a beverage has fallen into disrepute because it has happened occasionally that both the palate and the pocket of the public at some time or other have been trifled with by unscrupulous dealers; we are convinced, however, that this is only a fractional reason, although it may well be accountable for the practical absence of a demand for light red wines on the hotel table. Nowadays it is quite exceptional to find claret called for at hotels, for the simple reasons that, firstly, the price asked for it is exorbitant and, secondly, the wine supplied is frequently of a very inferior quality, if, indeed, it is not sour and undrinkable. In these circumstances it is not surprising that whisky and water (plain or aerated), regarded, as it generally is, as being above suspicion, has come to be the common accompaniment to a meal at the hotel. We believe that if hotel proprietors would undertake to provide their patrons with a sound Médoc wine at a reasonable price—say, 2s. or 3s. a bottle—they would find the step very widely appreciated and a profitable one. The objection generally urged, however, is that such a scheme would leave no margin of profit. This seems to us unlikely when we call to mind the fact that in almost every little inn in France a bottle of good sound wine can be obtained for 2 francs or so. It may not be a wine of great quality or delicacy but, generally speaking, it is at least a "clean," wholesome, and genuine vin ordinaire. The small margin of profit theory is, moreover, illogical, since a bottle of whisky for which 5s. or 6s. are charged and which is made to last for perhaps a week, would leave surely a smaller margin of profit than a bottle of claret ordered with each meal.

But there are other factors which have led the public taste in this matter to disregard delicate light wines in favour of more potent beverages. Good sound claret is the most

have been led by a process of exclusion, to the effect that the infection may possibly be conveyed by the mosquito *acartomyia Zammitii*. I wish particularly to examine some of the experiments of the Commission which tend to lead in another direction—namely, that infection may be acquired through the respiratory or digestive tract—but which appear to be not so conclusive as might be inferred from the reports.

I will commence at p. 46 in the first publication. Here, in Experiment I., we find a description of an attempt "to determine if the inhalation of dust infected with *micrococcus Melitensis* will give rise to Mediterranean fever in healthy monkeys." We are told that on July 10th, 1904, monkey No. 41 was placed in a cage and "infected dust blown around him." (This dust was mixed with living cultures of the *micrococcus Melitensis*.) 24 hours later infected dust was again blown round the monkey and when an hour had elapsed the animal was taken from the cage, which was then disinfected. The skin of the monkey, which must by then have been liberally sprinkled with living *micrococcus Melitensis*, was apparently not disinfected; at any rate, no mention is made of such precaution being taken. For a month or so the same procedure was continued daily. On Sept. 6th the monkey was found to be suffering from Malta fever and the result arrived at by the Commission was that "this experiment seems to show that inhalation or ingestion of infected dust will give rise to the disease." Now we know that these animals spend much of their time in scratching themselves and it therefore follows that during this experiment monkey No. 41 may have been repeatedly inoculating himself by scratching living *Micrococcus Melitensis* into irritated portions of his integument, which must have been in a very infectious condition, so that the result of this experiment may very probably have been merely an example of the contraction of the disease by inoculation. It is therefore quite possible that the conclusion arrived at by the Commission is not warrantable.

Again, under the heading "Experiment II.—to Determine if Injection of Dust Infected with *Micrococcus Melitensis* into the Nostrils and Throat will give rise to Mediterranean Fever in Healthy Monkeys," we read: "Monkey No. 47—July 9th—Injected dry dust containing *micrococcus Melitensis* into both nostrils." The injection was repeated on the 10th, 11th, 12th, 13th, and 14th. "29th.—Injected dried infected dust into back of throat; lips covered with cloth and tube passed through a wooden gag." This procedure was repeated daily until August 8th, on which day the monkey was found to have contracted Malta fever and we read: "Result.—From this and the last experiment it is evident [the italics are mine] that the inhalation and swallowing of infected dust will give rise to Malta fever in monkeys." Let us review this experiment. First of all let it be noted that for six consecutive days dust mixed with living *micrococcus Melitensis* was injected into the nostrils. The dust probably irritated the nasal mucous membrane, so that mucus containing living *micrococci* would run on to the lips, &c. Also the posterior nares must have been swarming with living *micrococci* and probably inflamed by the repeated dust injections. Both at this time and later, when from July 29th to August 8th daily injections into the back of the pharynx were carried on, I take it the mouth was also in a continually infectious state, so that the precautions adopted with the gag and cloth might have been futile because, as admitted in a note written on August 9th, there was "a very small abrasion" on the skin of the lower lip. I therefore suggest that the result of this experiment does not appear to justify the conclusion that "it is evident that the inhalation or swallowing of infected dust will give rise to Mediterranean fever in monkeys." It is well known that the disease is inoculable and I think that some undiscovered crack or abrasion of mucous membrane is almost sure to be infected when such enormous and unnatural quantities of infected material are used repeatedly over a considerable length of time.

Turning now to Experiment III., we find that monkey No. 39 was fed for 32 consecutive days upon pure cultures of *micrococcus Melitensis* mixed with boiled potatoes, the feeding having been commenced on July 10th and discontinued on August 10th, on which date the animal's blood was found to give a marked agglutination reaction for *micrococcus Melitensis*. Later the monkey was killed with chloroform and the organism was recovered from the spleen. After a description of the experiment and result we read: "Result.—

The absorption of *M. Melitensis* was extremely slow, but the monkey eventually suffered from an acute infection." I do not follow this argument. Had the monkey been fed *once* and contracted the disease 32 days afterwards, it could have been understood and have been admitted that the absorption was slow, or the incubation period possibly 32 days. But owing to the way the experiment was carried out it seems at least as likely that the monkey escaped infection until (say) August 2nd, giving an incubation period of about eight days only. This would be a different thing from "slow absorption" and I mention it as an important point in the investigation of the disease. Again, if the possibility which I have suggested be the right one it may be seen that the monkey might have swallowed pure cultures mixed with potatoes for about 24 consecutive days without becoming infected and this circumstance would then be a very strong argument against the theory of infection by the gastro-intestinal tract. The pitcher being taken so often to the well may have broken, as to speak, on the day when a lesion of the mucous membrane appeared.

In a description of Experiment V. we read: "13th August, 1904. This monkey is in a box next to monkey 39 and I noticed, about a week ago, that he ate some of the infected potatoes provided for No. 39. Examined blood serum; reacts instantaneously. This experiment is probably an instance of direct absorption of *M. Melitensis* through a crack or abrasion of the mucous membrane of the mouth; the period of incubation and the wave of fever correspond exactly with monkey No. 72 which was infected with *M. M.* through a crack in the mucous membrane over the incisor tooth." If infection was contracted through a crack in this case, why not in the other cases?

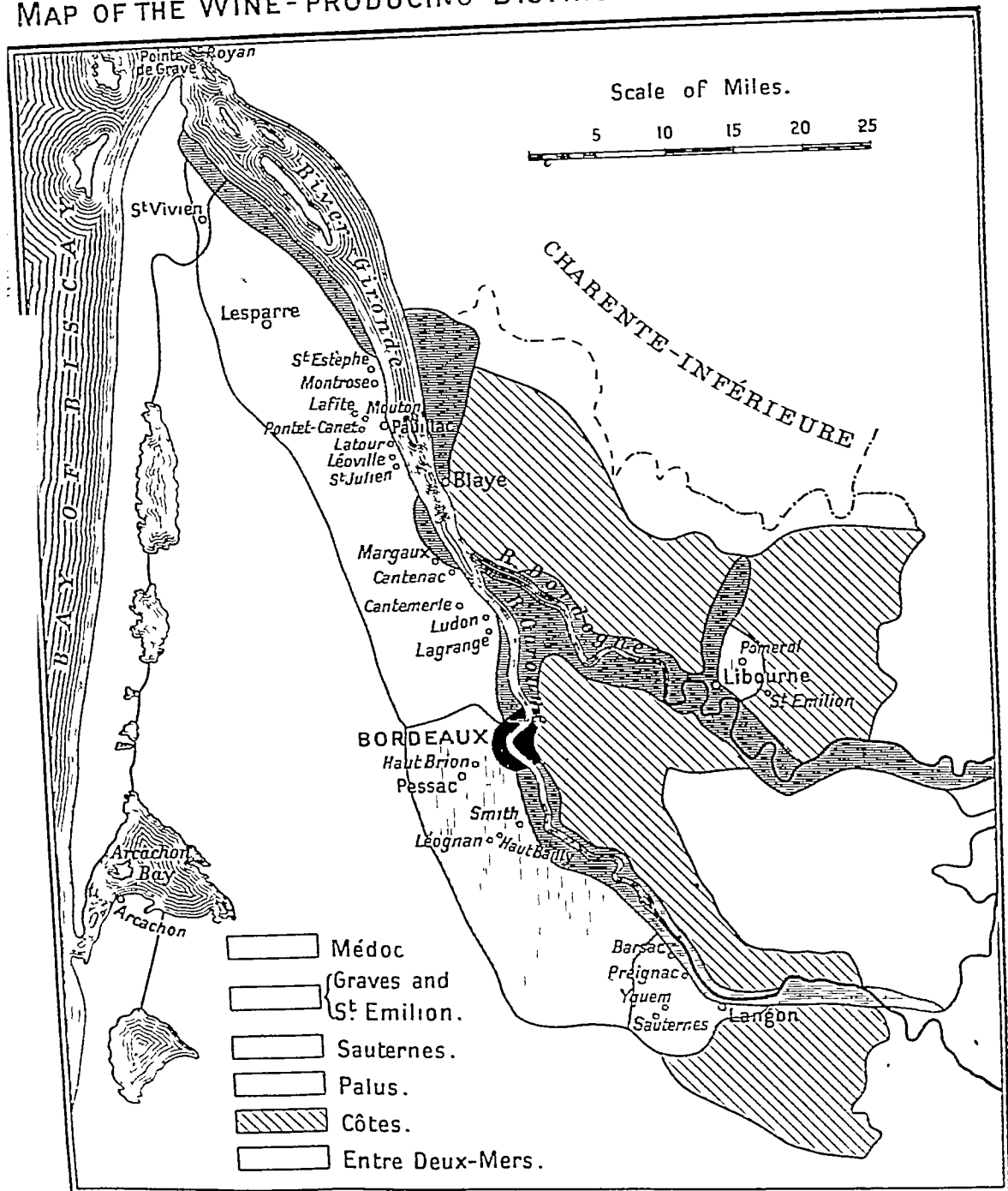
During September, 1904, several of the monkeys kept for experimental purposes contracted the disease without apparent cause. Major W. H. Horrocks, R.A.M.C., says in his remarks that this is probably due to infection conveyed from neighbouring monkeys. As diseased and healthy monkeys were kept on the same terrace close to one another, and mosquitoes also had free access to them all, this certainly seems to be very likely. Continuing his remarks, it is said: "On the other side of monkey No. 46 is monkey No. 47 infected by dust blown into the throat—evidently this monkey has become infected, either by personal contact, by urine, or by means of *stegomyia*. But why *stegomyia* in particular? Other species of mosquitoes had access to the animals.

Many other feeding experiments of the same kind were carried out, and it seems to me that the objections given above are applicable to them all. These are: (1) the monkeys were not isolated; (2) mosquitoes had access to them; and (3) it is impossible to say that the mucous membrane of the mouth and pharynx was free from lesions. With regard to Experiment VI., "to differentiate between absorption from the mouth and throat, and absorption from the stomach and intestines." In this experiment infected milk was passed into the monkey's stomach by means of an indiarubber tube. After the milk was introduced to the stomach the tube was presumably hauled up again, so that the end of it, being smeared with milk and *micrococci*, must have almost certainly infected the oesophagus, pharynx, and mouth. I would suggest that the stomach should be infected by means of capsules containing the emulsion pushed down the oesophagus by means of a bougie (under chloroform if necessary). The capsules would dissolve in the stomach and the upper tract would not be infected.

From the "conclusions" set down at the end of Section 4 I quote the following: "Infection by means of urine secreted by cases of Mediterranean fever readily explains the cases of Mediterranean fever which appear to arise spontaneously in hospitals." I do not agree with this conclusion because fresh cases do not arise in Haslar Hospital, where old cases have been kept in the wards for many years. It is only in hospitals in the endemic area that cases arise "spontaneously." Surely this is a most important point.

In Section 5 a description is given of methods for cultivation of the *micrococcus Melitensis* from the blood of patients as carried out by Staff Surgeon R. T. Gilmour, R.N. At the end of this description we read the following remark by the editor: "It is evident from Staff Surgeon Gilmour's experiments that the *M. Melitensis* is present in the majority of cases examined. Their number is, however, so small that it seems extremely doubtful if the disease can be carried by biting insects."

MAP OF THE WINE-PRODUCING DISTRICTS OF THE GIRONDE.



Area approximately = 65 x 80 miles.
Area under cultivation about 400,000 acres.

delicate as it is the least intoxicating of wines. The exquisite flavour of the Médoc wines in particular is easily spoilt and modern habits of living and of feeding conspire to blunt the delicate sense of the palate. The smoking of a cigarette or cigar, for example, invariably spoils the flavour of a choice claret and quite destroys the chance of appreciating and enjoying the taste and bouquet of a delicate wine. Coffee and liqueurs and even heavy wines, on the other hand, appear to many as agreeable accompaniments to smoking, the flavours of these liquids not being readily spoiled. Even so, these habits, whether we condemn them or not, should have no effect with respect to the claret consumed during a meal. Few now reserve a glass of Lafite or Margaux or Latour for after-dinner drinking, the use of port, liqueurs, or coffee, or of all three, having replaced the delicate and more interesting Châteauneuf claret. It has been said that it is only the man of refined tastes who can appreciate to the full the refinements of a "classed" Médoc wine or who can differentiate between vinous vulgarity and delicacy, and this is a factor which tends to reduce the ranks of appreciative claret drinkers. Certainly claret is abandoned by many, it is to be feared, because, as *Mr. Punch* once put it, "you can't get no forrader on it." Continual spirit drinking undoubtedly interferes with the relish for the less potent but more "flavoury" wines. Simplicity of diet at the table, again, was more the rule when claret was in favour, whereas the present custom is to adopt a number of varied courses, comprising *hors d'œuvre*, piquant sauces, highly seasoned dishes, savouries, and so forth, which help to destroy the chances of appreciating the best characteristics of a really elegant and interesting wine. These are, at all events, some of the contributory causes of the decline in the consumption of light wines, and it is a question worth considering whether this decline, in view of the adoption of stronger wines or of ardent spirits, is not without an unfavourable influence on the health and *morale* of the people.

There are few social reformers who do not agree with the view that the less alcohol that a nation drinks the better. It surely follows that the less potent the alcoholic beverage is the better also, for in that case the physiological allowance of alcohol is less likely to be exceeded. The spirit-drinking habit as opposed to the indulgence in light natural wines is deplorable, especially when it is largely confined to potations between meals. It should be remembered that for all practical purposes, and certainly as compared with wine, whisky is pure alcohol and that therefore a mixture of whisky and water is a very different thing from wine, although the alcoholic strength of both may be the same. It may be remembered also that pure alcohol as such is never a natural product; it must be separated from the environment in which it is produced by means of the still. The physiological effect of ten ounces of whisky and water containing 10 per cent. of alcohol and ten ounces of, say, claret containing also 10 per cent. of alcohol is notoriously different. The former instantly produces a marked sense of stimulation and warmth in the stomach; the latter is exceedingly slow in producing a similar effect, if, indeed, it is produced at all, and yet the amount of alcohol in the two liquids is the same. The physiological effect of the alcohol in the wine is modified, no doubt, by the natural constituents of the wine, such as the acids, tannin, glycerine, extractives, and so forth. It would appear, therefore, that the alcohol in claret is not so readily diffusible as is the alcohol in a mixture of spirits and water. Sparkling wine, such as champagne, proves to be a readily diffusible stimulant, probably because the effervescence acts as a stimulant to the movements of the stomach. The physiological effect of alcohol in claret is in some way checked and claret is thus less rapidly stimulating than a mixture of spirits and water containing the same proportion of alcohol; in other words, the former is a gentle, while the latter is a rapid stimulant. "It is a profound mistake," writes Dujardin Beaumetz, "to regard wine as a mere mixture of alcohol and water; it is a complete living entity, of which all the

elements constitute an *ensemble* so complex and heterogeneous that we cannot modify one or another without producing profound changes in the composition of the wine itself." Possibly the slow rate with which alcohol in claret is absorbed as compared with that of spirits and water is due to a difference of osmotic pressure exercised by the dissolved constituents of the wine. It is well known, at all events, that pure distilled water (that is, water which contains no salts) will act as a protoplasmic poison. If tissues or cells are placed in distilled water the water rapidly passes into the cells owing to the difference of osmotic pressure. The cells swell and may burst and die. This process in the stomach may lead to catarrh of the organ, the surface layers of the gastric epithelium undergo considerable swelling, salts may pass out, and the cells die and be cast off. Gastric catarrh, as is well known, is an invariable symptom of the confirmed spirit-drinker and it is conceivable that the purity of the alcohol which he constantly imbibes is a contributory factor to this catarrh owing to the difference of osmotic pressure between the alcohol and water and the gastric cells. On the other hand, the difference between osmotic pressure when wine is consumed must be relatively small owing to the extractives, glycerine, acids, and other constituents dissolved in the wine, and the passage of wine, unless it is strong and highly fortified, into the cells must be relatively slower. The placing of a slice of lemon in spirit and water would, in view of the phenomenon just referred to, tend to reduce the difference of osmotic pressure in a similar way.

In this connexion it is interesting to observe that there is a very excellent institution the members of which call themselves, we believe, semi-teetotallers who pledge themselves not to drink alcoholic beverages between meals. Common sense heartily approves of this form of abstinence from alcoholic liquors and though there are very many other cogent physiological considerations which clearly teach that such a course must be conducive to health, further proof of the discretion of such abstinence is furnished by the osmotic effects just described which indulgence in spirits is calculated to bring about. A consideration of this fact also teaches a lesson in regard to the drinking of light wine as opposed to the drinking of spirits. It would be interesting if those scientific men who condemn root and branch the use of alcohol in any form would conduct an experimental inquiry on the lines indicated and determine whether it is correct to assume that the physiological effect of alcohol in the form of wine is the same as when pure alcohol is given. There can be little question that a light natural wine is infinitely less harmful physiologically as regards alcohol than are ardent spirits. No better evidence in support of this can be cited than the fact that in spirit-drinking countries crime and disease ascribable to alcohol are the rule, while in countries where light wines are even freely consumed the evils arising from drink are the exception and drunkenness is comparatively unknown. So strongly has the fact impressed itself on certain communities that steps have been taken to encourage the drinking of light wines by reducing the duty on them in the hope that the consumption of spirits would be discouraged. In Paris, for example, the "octroi" on wines brought into the city have been taken off with the view of encouraging the drinking of light natural wine and of diminishing the vicious results occurring from the consumption of ardent alcoholic liquors, such as spirit, absinthe, and so on. The moderate drinking of claret in particular has been credited with diminishing the tendency of preserving a sober standard and of leading to the abandonment of the daily libation of powerful spirituous liquors. On temperance grounds it is a pity, we think, that the duty on really light natural wines imported into this country cannot be reduced to an even lower rate than it was some years ago. Really light wine might with advantage, we suggest, come under a lower scale of duty than is at present charged, the same rate now being put upon wines of a higher alcoholic strength than claret. In wine-producing countries, again, light natural cheap wine is consumed in large quantities, amounting to as much as two pints a day without any observed ill effects on the health. Sociologically, therefore, the decline in the consumption of light wines in favour of stronger drink demands serious consideration.

At the outset we stated that Bordeaux wines or clarets were never cheaper, more abundant, and purer than they are at the present time. It is necessary to examine carefully and

The Graves district borders on the river Garonne and produces both red and white wines. Amongst the favourite red wines are those of Château Haut Brion, just west of, and quite close to, Bordeaux, which in fact is classed in the first division; Château Smith, Haut Lafitte, and Château Haut Bailly. The classification of the white wines of the Gironde relates to the wines of the Sauternes, the Grand first growth being that of the world-famous Château Yquem, while other wines enjoying distinction in the first class are those from La-Tour-Blanch, Peyraguey, Vigneau, and Rabaut in the Bommes district; Château Coutet, Climens at Barsac, Château Suduiraut at Preignac, Château Guiraud at Sauternes, and Château Rieussec at Fargues. In the second class are wines from Château Mirat (Barsac), Doisy (Barsac), Peyxotto (Bommes), D'Arche Filbot (Sauternes), Broustet-Nérac (Barsac), Caillon (Barsac), Souau (Barsac), Malle (Preignac), Romer (Preignac), and Lamothe (Sauternes). The chief town in the Sauternes district is Langon, which is beautifully situated on the banks of the Garonne. The most important wines produced in the Côtes are those in the district of St. Emilion. They are often called, on account of their full body and generous character, the *burgundies of the Gironde*. Amongst famous growths are Châteaux Ausone, Cheval Blanc, Bel-Air, and Pavie. Close by is Pomerol which also produces wines of estimable character. St. Emilion is a most interesting and picturesque town situated in a charming district of hills and vales, about five miles east of Libourne on the river Dordogne, the bridge

grapes should be pressed at all; so much of the juice escapes by the pressure of the fruit itself and during the process of separating the stalks that the semi-liquid mass containing whole fruit is transferred straight away into the vat without further attention. In the majority of cases, however, the grapes are carefully picked and pressed but the skins are always put into the juice in the great vats. We give an illustration in Fig. 4 of a typical *pressoir*. Fermentation steadily proceeds in these vats which are closed in order to keep the generated carbonic acid gas as much as possible in the vat and thus to protect the wine that is developing from the action of the air. The escape of gas is provided for by a small pipe dipping into a water seal. The bubbling noise of the gas passing through the water in an otherwise perfectly quiet *curier*, where there may be a dozen vats of immense capacity each contributing its volume, is a strange and impressive sound. The primary fermentation being concluded, after about ten days the young wine is drawn off (*décuvage*) and eventually transferred to scrupulously clean hogsheads (*barriques*). The hogsheads are placed in the cellar where the wine is jealously watched during its development and the only care that remains to be bestowed upon it is in the racking (drawing off the clear wine from the lees or residues) which is done as often as there is occasion, according, in fact, to the development of the wine. A comparatively quiet secondary fermentation succeeds the first but soon subsides until practically the whole of the grape sugar is exhausted. There is little doubt that careful

FIG. 1.



The gathering of the grapes.

over the river being part of the national road running from Bordeaux to Paris. All the districts just described were visited by our Commissioner during vintage time. And we may now pass to the methods of making the wine from the grapes as he saw them practised in these districts.

WINE MAKING IN THE GIRONDE.

There is surprisingly little to describe in regard to the method of making wines in the Gironde for the excellent reason that it is simplicity itself and we doubt whether any other wine than claret can claim to be left so entirely to purely natural processes. Indeed, claret makes itself without even the intervention of a press in some cases, for in the ordinary processes of picking, carting of the grapes, and separating the stalks some of the juice is liberated; fermentation rapidly sets in and the berries that happen to remain whole in the vat burst, their juice joining in the fermentation already established. The grape is black, with a diameter of about that of a threepenny piece, and in a healthy state is usually covered with a strong bloom. The colour of claret is entirely due to the skins and if these were omitted from the vat practically a white wine would result. All grape juices is white whether the grape is white or black. Vintage time in the Médoc affords a very interesting and picturesque sight. We reproduce some photographs illustrating in Fig. 1 the gathering of the grapes, in Fig. 2 the removal in carts drawn by oxen to the *curier* (Fig. 3) the place in which the grapes are pressed and the wine is stored in vats.

As already stated, in some cases it is not necessary that the

and well-timed racking is a very important factor in the production of a good wine and any neglect to carry out this simple operation may make all the difference between success and failure. With ordinary wines bottling may be commenced at the end of the second year, but as a rule fine and full-bodied wines are not bottled until the end of the third year or fourth year or even after a longer period.

Such, in brief, is the story of the making of claret from the juice of the grape and the entire process is extremely simple, being effected from beginning to end by what practically amounts to purely natural agencies. The grape juice ferments until fermentation ceases and in order to gain a clear and brilliant product the resulting wine is simply poured off from certain insoluble matters, as from time to time they subside and are thrown out by the alcohol produced. The degree of cleanness and brilliancy depends upon the care and regularity with which the racking is done. The word claret is probably derived from "*clair*," cleared or clarified (Latin "*clarus*," clear). It was but a step from the old French participle "*clairé*" to the adjectival noun "*clairé*" or, as we have it, Anglicised, "claret." The clearing process is often assisted by fining the wine with white of egg, which process adds nothing foreign to the ultimate wine but merely withdraws matters identical with those thrown out in the ordinary course of events in the natural deposit. There are, of course, certain minor details connected with the management of wine during its development but we have confined our account to the principal and essential steps in the simple operation. Suffice it to add that at no stage in the

minutely into this statement in order to determine whether it can be justified by first of all looking into the facts connected with the production of red and white wines in the districts of which Bordeaux is the centre in the south-west of France; and, secondly, by submitting to the test of the palate and of chemical analysis samples of wine which are known to be genuine because obtained personally at the place of production and comparing the results with wines bought in the open market. Finally, it will be of interest to discuss the composition of wine in relation to its dietetic uses. We are aware, of course, that the composition of Bordeaux wines has been determined again and again by numerous observers and a great number of more or less trustworthy analyses have been published; nevertheless, we venture to think that in the work of the practical and scientific inquiry recently undertaken by our Special Commissioner there are presented some new features in analysis which are of special interest in connexion with the dietetic value of wines. We may resolve our inquiry therefore into the following order of investigation—namely, an inspection of the processes concerned in the production of Bordeaux wines, the normal composition and characteristics of genuine wines obtained personally at their source, and the general composition and characteristics of wines sold in the market as claret; finally a section is devoted to some points in connexion with their dietetic application.

THE WINE-PRODUCING AREAS OF THE MÉDOC, GRAVES, SAUTERNES, AND ST. EMILION DISTRICTS (GIRONDE).

The reputation of the wines of the Gironde has been built upon the yield of an area represented in some 400,000 acres under cultivation, while the complete district is not more than 65 miles by 80 miles, or an area of 5200 square miles. The whole wine-producing area of which we speak is, in fact, rather less than the area of the county of Yorkshire in England and yet it has furnished the world's claret supply for years and years and no other country in the world can compete with it in producing wine of equal delicacy, fragrance, and elegance. From the year 1880 onwards the production has steadily increased, although the area under cultivation has remained much the same; improved methods of cultivation have in fact resulted in a greater yield of fruit and hence of wine. Of course, some years show a diminished yield owing to unfavourable meteorological conditions, frost or wet it may be or insect ravages. The yield in 1880 was 36,000,000 gallons and in 1900, the most prolific year, it was 128,000,000 gallons; in 1904 it was 99,000,000 gallons; and in the last vintage (1905) the production promises to be about 95,000,000 gallons. The division of the entire department into six districts is shown in the map (p. 321). The districts are as follows and are indicated in the map by various shadings: Médoc, Graves, Sauternes, Côtes, Palus, and Entre-deux-Mers. Strictly speaking, the only district bordering on the Gironde, if we except certain small low-lying districts chiefly on the east bank and known as the "Palus," is Médoc itself. The name Gironde is applied to the estuary of that river and nearly 50 miles from the mouth it divides into the Dordogne and the Garonne at a point just above Blaye. The Garonne then traverses the districts where the wines of the Graves (white and red) and Sauternes district (white only) are produced, while the Dordogne runs through the valley on which borders the famous St. Emilion district (red wine). All these districts were visited by our Commissioner during the full operations of the 1905 vintage. The wines produced in these districts are broadly spoken of as the wines of the Gironde and the red wines are all included under the name of "claret."

Bordeaux may be called the city of cellars, every conceivable space underground being utilised for the storing of wine, and it may be imagined what immense stocks there are. The city lies at the southern extremity of the Médoc but is situated in the upper part of the Graves district. In Bordeaux the expression "*vin blanc et rouge*" means white and red wine produced in the districts shown on the map and lying around the city. The Médoc is less inland than the other districts and, in fact, is situated between the sea and the broad estuary of the Gironde and hence the word Médoc is probably a contraction of "*In Medio Aquæ*." In places this estuary is more than five miles wide. On the east side of the estuary and northwards lies the Charente Inférieure, bordering in its turn on the famous brandy-producing district, the Charente, with Cognac as its centre. By

far the greater number of châteaux are situated in the Médoc which is the most productive area and certainly the wines of the Médoc are the most widely known. Mention need not be made of Châteaux Lafite, Margaux, Latour, Pontet-Canet, Mouton, Léoville, and so on, which are close to the towns either St. Julien or Pauillac (the Gravesend, so to speak, the Gironde). There are thousands of minor châteaux devoted to the production of good wine, the quality varying according to the district in which the wine is produced. It is very remarkable to notice how sharply a district bearing superior wine is marked from a district bearing inferior wine. The districts may, in fact, be contiguous but there is no doubt of the difference in the quality of the wine produced in each vineyard, though they are almost adjoin. The quality of a wine is, in fact, dependent upon soil and this varies considerably, even in the same districts. It is still the custom of the wine industry in the Médoc to adhere to a classification of "growths" which was drawn up very many years ago and which has been again upon as official and as a sort of hall-mark, and it is generally conceded that the division is a convenient one as regards standardising wines. It cannot be denied, however, that with improved attention to methods of cultivation during recent years growths placed outside this classification are called *superior bourgeois* or *simply bourgeois* really take a place in the list, especially as this grouping into classes was made so long ago. Certainly several of the unclassified wines run the classified wines very closely regards flavour and delicacy and amongst the former many excellent cheap wines (from 12s. to 24s. a dozen) are in this country.

The classification is as follows and next to the name of the château is given the name of the locality in which it is situated:—

FIRST GROWTHS (PREMIERS CRUS).

Château Lafite, Pauillac	Château Margaux, Margaux
Château Latour	"

SECOND GROWTHS (SECONDS CRUS).

Château Mouton Rothschild, Pauillac	Château Gruaud-Larose, St. Julien
" Rauzan-Ségla, Margaux	" Brane-Cantenac
" Rauzan-Gassies	" Cantenac
" Léoville-Lascases, St. Julien	" Pichon-Longueville, Pauillac
" Léoville-Barton, St. Julien	" Pichon-Lalande, Pauillac
" Léoville Poyferré, St. Julien	" Ducru-Beaucailhou, St. Julien
" Durfort-Vivens, Margaux	" Cos-d'Estournel, St. Estèphe
" Lascombes	" Montrose, St. Estèphe
" Gruaud-Larose-Sarget, St. Julien	"

THIRD GROWTHS (TROISIÈMES CRUS).

Château Giscours, Labarde	Château Palmer, Cantenac
" Kirwan, Cantenac	" La Lagune, Ludon
" d'Issan	" Desmirail, Margaux
" Lagrange, St. Julien	" Calon Ségur, St. Estèphe
" Lango	" Ferrière, Margaux
" Malescot-Saint-Exupéry, Margaux	" Marquis d'Almeida, Becker, Margaux
" Cantenac-Brown, Cantenac	"

FOURTH GROWTHS (QUATRIÈMES CRUS).

Château Saint-Pierre-Sevalstre, St. Julien	Château Pouget, Cantenac
" Saint-Pierre-Bontemps, St. Julien	" Latour-Carnet, St. Laurent
" Branaire-Ducru, St. Julien	" Rochet, St. Estèphe
" Talbot, St. Julien	" Beycheville, St. Julien
" Dubart-Milon, Pauillac	" Marguès-de-Termes, St. Julien
"	" Le Prieur, Cantenac

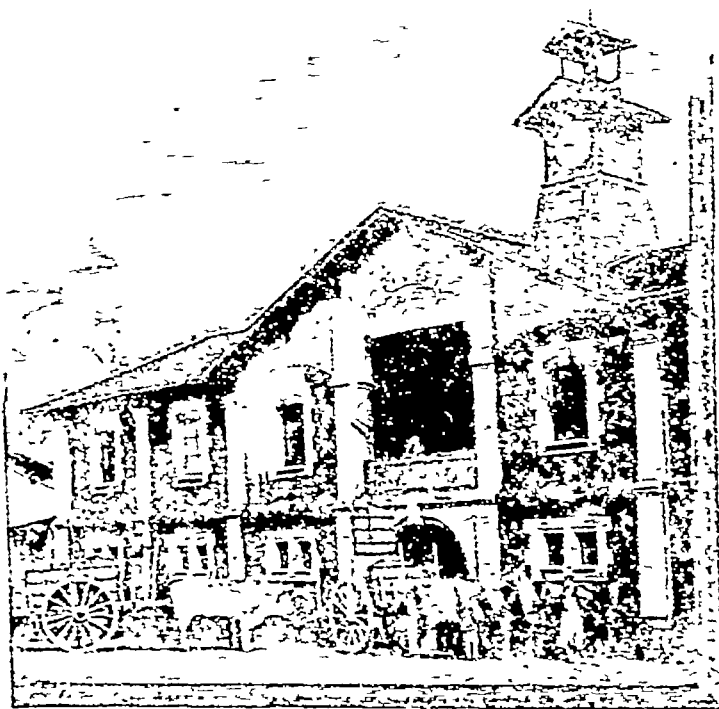
FIFTH GROWTHS (CINQUIÈMES CRUS).

Château Pontet-Canet, Pauillac	Château Le-Terre, Arzac
" Batallay	" Haut-Bages, Pauillac
" Grand-Puy-Lacoste, Pauillac	" Pédasclaux
" Grand-Puy-Ducasse, Pauillac	" Belgrave, St. Laurent
" Lynch-Bages, Pauillac	" Camensac
" Lynch-Moussas	" Cos-Labory, St. Estèphe
" Dauzac, Labarde	" Calve-Croizet-Bages, Pauillac
" Mouton-d'Armailhacq, Pauillac	" Cantemerle, Margaux

the whole it varies but little either on one side or the other of 10 per cent. by weight or 12·40 per cent. by volume. The extractive matters in claret are, as a rule, a fairly constant quantity, averaging 2·55 per cent. The figure is somewhat lower for old wines, while it is a little higher for the St. Emilion and Graves wines. Wines of delicate character, as a rule, seldom contain more than 2·50 per cent. of solid matters in solution. The average amount of glycerine in clarets is 0·642 per cent., but the amount varies in accordance with the nature of the wine, the maximum, as a rule, being just short of 1 per cent. and the minimum 0·43 per cent. The wines from the St. Estèphe district are generally characterised by containing the highest quantity—i.e., over 0·9 per cent. This is an interesting feature of St. Estèphe wines and almost serves, in our experience, as a hall mark. Whenever we purchased in the open market, and we obtained several samples in this way, a wine described as St. Estèphe, it always showed this relatively high proportion of glycerine. In old wines the glycerine is likely to

colour, as a rule, show a relatively small proportion of nitrogenous substances and *vice versa*, and in a wine decolourised by animal charcoal there is practically no nitrogen at all. The wines showing the highest proportion of nitrogenous bodies were No. 3 and No. 10 in Table A, and these showed the highest intensity of colour. On the other hand, the wine showing the smallest amount of nitrogen—namely, No. 1 in the table—showed the least intensity of colour. The nitrogen diminishes again in old wines due to loss by deposition and their colour is correspondingly reduced. The inference is that in red wines the nitrogen is part and parcel of, at any rate, some of the colouring constituents and it is of interest to add that the grape skin contains 1·45 per cent. of nitrogen which, calculated as albuminoid, amounts to 9·14 per cent. The average amount of albuminoid ($N \times 6·3$) in claret is 0·278, extreme points being 0·395 and 0·105. We shall return to this question of the amount of nitrogenous constituents present in wine, since they appear to affect the digestibility of wine in direct proportion to their amount

FIG. 3.



The press and vat-house.

exceed 0·5 or 0·7 per cent. Glycerine is, of course, a perfectly normal product of various fermentation and is probably a contributory factor to the preservation and conditioning of a wine and as well tending to give it body and sweetness. The chief preservative in wine, however, must be the alcohol, since de-alcoholised wine rapidly changes and gets mouldy. The sugar in clarets is practically constant, rarely exceeding 0·2 per cent., the average being as low as 0·130 per cent. Clarets contain, as a rule, less sugar than do white wines. Tannin is also a fairly constant quantity and averages 0·235 per cent. The amount is reduced by age or by fining. There appears, however, to be no relation between the amount of tannin and nitrogenous substances in a wine. The tannin, colouring matter, and nitrogenous substances share one common property in wine, since when red wine is decolourised with animal charcoal all three are found to be practically absent in the colourless wine.

The amounts of nitrogenous matters in claret vary somewhat widely and a relation seems to exist directly between the total nitrogen and the intensity of colour. Wines of low

and, as a rule, as colour diminishes the less is the interference caused by the wine with the digestive processes. It would follow that the young highly coloured wines are less digestible than the old wines in which the colour has largely disappeared. There are, however, other factors in the composition of wine as we shall presently see which may discount such a deduction or the idea of any relationship existing between colour and digestibility.

It is curious that claret is so often regarded as an acid or a sour wine. As a matter of fact it is the least acid of all wines and is certainly less acid than white wine. Claret is the "driest" of wines, there being practically no sugar present to disguise the small degree of acidity that exists. The palatability of sparkling wines such as champagne is considerably diminished when the wine is excessively dry and they appear intensely acid when the sugar is entirely removed. Of course, claret easily becomes sour if it is not securely corked or when the means to keep it away from the oxidising action of the air is defective. A good delicate mature claret will not keep; young, rough, vigorous wine, on the other hand, will

making of claret is there any recourse to the use of artificial agents and genuine claret is never fortified by the addition of spirit. In short, as we have said, claret is the simplest type of wine and the product of purely natural agencies, requiring no additions whatever to fit it for consumption or to adapt it to the public taste.

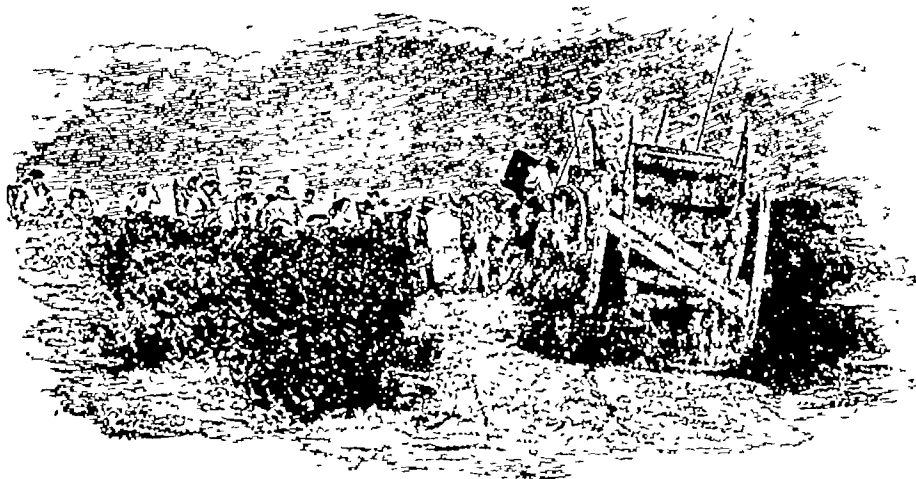
The red wines in the Graves district are produced much in the same simple way, as is also white claret (made from white grapes), while in the Sauternes district the method of wine making is totally different. The white grape of the Sauternes is allowed to get thoroughly ripe until, in fact, it shows signs of wrinkling up and rotting and consequently the vintage is later than in the Médoc. The grapes are picked with very great care and discrimination off the bunch singly grape by grape and after a thin mould has formed upon them. In the press house they are first trodden under foot and then by machinery, the expressed juice being collected and put straight into the hogshead in which the fermentation takes place, which generally lasts several weeks. The wine becomes bright and fermentation is arrested partly by the alcohol generated and partly by the onset of the cold weather. The grape juice, as may be anticipated, is very rich in sugar and the best Sauternes are sweet, and unless certain precautions are taken, as by burning some sulphur in the casks, fermentation will readily start again on the slightest provocation. Wines for export are also "sulphured" otherwise the casks containing them would

would imply, and in wine are also found, besides alcohol, the additional products of fermentation, such as glycerine, ethers, and higher alcohols. Moreover, as the alcohol develops it exerts a solvent action on the extractive matters of the skin and thus tannin and colouring matter appear in the wine. A sample of grape juice taken in the Médoc during the 1905 vintage gave the following results (grammes per 100 cubic centimetres) on analysis in THE LANCET Laboratory. Side by side with this analysis is placed an average analysis of a Médoc wine. A comparison of the two shows broadly the changes in composition effected by fermentation.

The Composition of Grape Juice compared with Wine.

	Grape Juice.	Claret.
Total solid matters	23.12	2.55
Sugar	21.60	0.13
Alcohol	—	9.83
Water	76.87	87.61
Glycerine	—	0.542
Tannin	traces.	0.235
Albuminoid (N x 6.3)	0.30	0.273
Total volatile acidity calculated as acetic acid	—	0.127
Total fixed acidity reckoned as tartaric acid	0.69	0.450
Potassium tartrate	0.34	0.166
Total mineral matter	0.34	0.220

FIG. 2.



Carting the grapes.

burst. There are, however, some very agreeable dry wines produced also in the Sauternes, but the most famous, as that of Yquem, are sweet, full, and generous and carry a high perfume. We deal with the character and composition of these wines in a section devoted to their analysis further on.

It may be added, in concluding this description of the wine-making processes of the Gironde, that no attempt is made to keep the processes away from public scrutiny and anyone is at liberty to visit the *cuvier* during the busy time of pressing the grapes; indeed, the entire operations during vintage, as during the harvest of corn in England, may be watched in detail from the roadway, and there are scores of presshouses opening on to the highway from which the pressing of the grapes may be seen as well as the processes involved in the consignment of the juice to the vats.

THE COMPOSITION OF THE WINES OF THE GIRONDE.

Millions of gallons of grape juice would be annually wasted if fermentation did not step in, which it does the moment the juice is set free from the fruit and preserves it in the form of wine. Fermentation may therefore be regarded as a preserving process in which the development of alcohol corresponding to the amount of sugar present in the juice is the chief factor. Broadly speaking, wine is grape juice with the sugar replaced by alcohol. The process of fermentation is, however, more complex than this statement

It should be added that the grape juice, previously to its despatch to THE LANCET Laboratory, was sterilised by heating immediately it left the press and certain albuminoid matters, gums, &c., had coagulated. These were collected, dried, and weighed, the sediment amounting to 1.02 grammes per 100 cubic centimetres of juice. The sediment contained mineral matter, 15.64 per cent.; albuminoid matters, 16.06 per cent.; and gums, fibre, and acids, 68.36 per cent. The coagulum obtained on sterilising grape juice bears a close resemblance to the composition of wine lees. The juice was slightly tinged red and contained merely traces of tannin.

The normal composition of genuine clarets is shown in Table A. The specimens were secured personally in Bordeaux by our Commissioner and an attempt was made to select types representative of the various districts shown in the map. They include the red wines grown in the districts of St. Estèphe, Pauillac, Margaux, St. Julien, Cantenac, and Labarde in the Médoc, Pessac and Léognan in the Graves district, and Pomerol and St. Emilion in the St. Emilion district. From time to time a considerable number of analyses of claret have been published in English scientific journals but hitherto these analyses have omitted certain important items which the present analyses supply, we believe, for the first time.

The results may be briefly summarised. The alcohol in claret rarely exceeds 10 per cent. by weight and on

TABLE B.—ANALYSES OF TYPES OF CLARETS BOUGHT IN THE OPEN MARKET.
(Results in Grammes per 100 c.c.)

Description.	Alcohol by weight.	Alcohol by volume.	Water.	Extractives.	Glycerine.	Sugar.	Tannin.	Protoid = N x 6.3.	Total volatile acidity as acetic acid.	Total fixed acidity as tartaric acid.	Probable real tartaric acid.*	Potassium tartrate.	Total mineral matter.	Observations.
Claret. 1. Vin Ordinaire	10.77	13.34	87.00	2.23	0.624	0.111	0.235	0.245	0.111	0.55	0.49	0.113	0.20	Sound natural wine.
2. Médoc	10.60	12.40	87.10	2.90	0.706	0.340	0.177	0.204	0.090	0.48	0.45	0.124	0.19	A non acid, agreeable, soft wine and undoubtedly genuine.
St. Vivien. 3. Bourgeois Wine	9.50	11.79	87.40	3.10	0.930	0.100	0.235	0.141	0.125	0.50	0.44	0.113	0.18	A genuine wine but somewhat featureless.
Claret. 4. Bourgeois Wine	9.79	12.13	87.26	2.95	0.780	0.151	0.177	0.194	0.084	0.48	0.43	0.180	0.20	A type of excellent vin ordinaire.
Cotes. 5. Vin Ordinaire	8.14	10.12	89.95	1.90	0.554	0.100	0.200	0.176	0.180	0.39	0.35	0.056	0.10	Genuine wine but rather poor quality.
Château Montrose. 6. St. Estéphe, 1899	10.38	12.87	87.07	2.55	0.970	0.103	0.223	0.211	0.158	0.40	0.33	0.135	0.12	An elegant wine.
Château Lafite, 7. Pauillac, 1895.	10.06	11.52	87.40	2.54	0.780	0.090	0.330	0.229	0.165	0.39	0.31	0.200	0.23	A pure, soft, flavoured wine.
Mean results	9.80	12.02	87.59	2.59	0.776	0.142	0.232	0.201	0.132	0.45	0.40	0.131	0.17	—

* This column gives the total acidity less that due to tannic acid.

TABLE C.—ANALYSES OF PROBABLY BRITISH MADE WINES LABELED AS MÉDOC WINE.
(Results in Grammes per 100 c.c.)

Description.	Alcohol by weight.	Alcohol by volume.	Water.	Extractives.	Glycerine.	Sugar.	Tannin.	Protoid = N x 6.3.	Total volatile acidity as acetic acid.	Total fixed acidity as tartaric acid.	Probable real tartaric acid.*	Potassium tartrate.	Total mineral matter.	Observations.
1. Médoc	9.86	12.22	87.52	2.62	0.968	0.18	0.118	0.194	0.185	0.63	0.600	0.113	0.15	Fermented grape juice but not a Médoc wine.
2. Médoc	9.00	11.17	88.42	2.58	0.350	0.10	0.200	0.141	0.177	0.49	0.450	0.090	0.32	Fermented grape juice with uninteresting flavour.
3. Médoc	10.85	13.43	87.40	1.75	0.373	0.20	0.150	0.169	0.234	0.30	0.250	0.100	0.10	Fermented grape juice but not a Médoc wine.
4. St. Estéphe	12.38	15.30	84.28	3.34	0.991	0.55	0.235	0.070	0.171	0.57	0.510	0.056	0.13	Probably an unsound Médoc wine fortified with spirit.
Mean results	10.52	13.03	86.90	2.57	0.650	0.25	0.176	0.143	0.194	0.49	0.450	0.069	0.17	—

* This column gives the total acidity less that due to tannic acid.

TABLE D.—ANALYSES OF WHITE WINES.
(Results in Grammes per 100 c.c.)

Description.	Alcohol by weight.	Alcohol by volume.	Water.	Extractives.	Glycerine.	Sugar.	Tannin.	Protoid = N x 6.3.	Total volatile acidity as acetic acid.	Total fixed acidity as tartaric acid.	Potassium tartrate.	Total mineral matter.	Observations.
Château de Tastes. 1. Sauternes	12.55	15.66	83.60	17.50	0.633	14.000	Trace	0.356	0.090	0.45	0.339	0.35	A sweet wine with exquisite flavour.
Château de Rayne. 2. Sauternes	12.31	15.21	77.49	10.10	0.729	7.200	Trace	0.652	0.141	0.40	0.158	0.33	Less sweet than the previous wine but with excellent æsthetic qualities.
Petites Graves	8.71	10.22	83.84	2.45	0.541	0.23	Trace	0.141	0.135	0.73	0.109	0.23	A "dry," "clean" wine and of light alcoholic strength.
Grand Sec. 4. 1st Vin de Graves	11.47	14.18	85.23	2.25	0.603	0.240	Trace	0.243	0.120	0.63	0.079	0.20	A very agreeable wine with delicate flavour.

last for days after it has been poured out of the bottle. This serves as a simple but correct way of differentiating a wine of delicate character from a coarse one. The amount of fixed acidity in clarets expressed in terms of tartaric acid seldom exceeds 0.45 per cent., the average being 0.40 per cent., and in a sound wine the volatile acidity reckoned as acetic acid is seldom more than 0.17 per cent., the average being 0.127 per cent. The amount of potassium tartrate in claret is fairly constant also, the average being 0.166 per cent. It increases in full-bodied wines. The mineral matter varies between limits of 0.10 and 0.30 per cent. Summing up, it may be stated that, generally speaking, clarets, even from different districts, show a fairly uniform composition, and the small variations that are seen to occur may be accounted for by the special circumstances in which the wine is produced, as to whether it is old, delicate, full-bodied, coarse, highly or thinly coloured, and so forth. The generous and somewhat full character

in Table B. Besides those given in the table we have purchased many other samples which were submitted not to analysis but to the palate of an expert who pronounced them all to be wines possessing the genuine Bordeaux characteristics, though in some instances his opinion was qualified by such remarks as "perfectly genuine wine but not of great quality," "thin wine," "somewhat coarse," and so on, but all were described correctly as claret—that is, wine produced in the Médoc and other districts of the Gironde. Moreover, the price in some instances was not more than 12s. a dozen, comprising samples of really good *vin ordinaire*, while quite good claret with delicacy and bouquet and attractive flavour was purchased at from 15s. to 30s. a dozen.

On the whole it is satisfactory and gratifying to be able to report that the public get what they ask for when they purchase claret. There are, however, exceptions which we will point out although if our observations are followed there

TABLE A.—ANALYSES OF GENUINE CLARETS.

(Results in Grammes per 100 c.c.)

Description.	Alcohol by weight.	Alcohol by volume.	Water.	Extractives.	Glycerine.	Sugar.	Tannin.	Protoid = N x 6.3.	Total volatile acidity as acetic acid.	Total fixed acidity as tartaric acid.	Probable real tartaric acid.*	Potassium tartrate.	Total mineral matter.
Leoville Lascases.													
1. St. Julien, 1890	9.21	11.44	88.29	2.50	0.430	0.140	0.236	0.105	0.138	0.41	0.35	0.124	0.20
Rauzan Segla.													
2. Margaux, 1896	9.29	11.52	88.17	2.54	0.561	0.125	0.236	0.176	0.169	0.41	0.35	0.132	0.25
Chateau Palmer.													
3. Cautenac, 1899	10.38	12.87	86.88	2.64	0.683	0.130	0.200	0.356	0.111	0.45	0.41	0.080	0.14
Chateau Langou.													
4. St. Julien, 1896	9.79	12.13	87.61	2.60	0.670	0.111	0.236	0.282	0.129	0.46	0.40	0.150	0.20
Chateau d'Issan.													
5. Cautenac, 1899	9.57	11.87	87.53	2.90	0.620	0.110	0.259	0.336	0.135	0.48	0.41	0.250	0.25
Montrose.													
6. St. Estèphe, 1899	10.06	11.52	87.38	2.56	0.910	0.160	0.188	0.275	0.135	0.48	0.43	0.180	0.45
Chateau Latour.													
7. Pauillac, 1880	10.77	13.34	86.83	2.40	0.845	0.140	0.236	0.229	0.168	0.50	0.44	0.225	0.32
Petrus Pomerol.													
8. St. Emilion, 1900	9.36	11.61	87.84	2.80	0.645	0.170	0.318	0.211	0.174	0.41	0.33	0.101	0.10
Chateau Haut Brion.													
9. Graves Red, 1899	10.23	12.68	86.77	3.00	0.756	0.160	0.306	0.324	0.129	0.48	0.40	0.146	0.25
Chateau Pavie.													
10. St. Emilion, 1899	10.16	12.57	86.79	3.05	0.550	0.100	0.212	0.395	0.112	0.52	0.47	0.259	0.30
Chateau Dauzac.													
11. Laborde, 1899	9.29	11.52	88.25	2.45	0.580	0.135	0.200	0.388	0.132	0.46	0.42	0.153	0.25
Chateau Loudenne.													
12. St. Yzans	9.96	12.35	87.38	2.66	0.620	0.143	0.236	0.299	0.102	0.46	0.40	0.180	0.23
Ducru Beaucailhou.													
13. St. Julien, 1893	9.64	11.96	88.06	2.30	0.665	0.090	0.236	0.317	0.138	0.50	0.44	0.200	0.30
Chateau Lafite.													
14. Pauillac, 1896	9.96	12.30	88.74	1.30	0.462	0.120	0.236	0.211	0.096	0.49	0.43	0.100	0.11
Mean results	9.83	12.12	87.61	2.55	0.642	0.130	0.238	0.278	0.127	0.46	0.40	0.166	0.22

* This column gives the total acidity less that due to tannic acid.

of a St. Estèphe, a red Graves, or a St. Emilion wine (the last being often called the burgundy of the Gironde) has its counterpart in a slight increase in alcoholic strength, in the amount of extractives, tannin, nitrogenous bodies and intensity of colour. The delicate wines, on the other hand, show a less robust constitution even from an analytical point of view. It is, however, chiefly the æsthetic qualities of a wine which give it the greatest esteem and up to the present chemical analysis can throw little light upon those elements which determine the fragrance, bouquet, and flavour of a wine. The estimation of the secondary products of fermentation (higher alcohols, ethers, and aldehydes) gives, however, some interesting results, as will be seen further on.

Having presented what may be regarded as the normal results of analysis given by clarets which we know to be genuine, we may next proceed to apply the same methods to the examination of wines described as clarets bought in the open market. The analytical results will be found

should be no difficulty in avoiding these exceptions. It should be stated that when purchasing these samples which proved to be genuine we made no special endeavour to procure samples which were suspicious either by being sold at an absurdly low price, say at 6s. a bottle, or by bearing a label which conveyed nothing. Later, however, we turned our attention to abnormally cheap wines and we found that for the most part these were being sold at cheap Italian restaurants. We append the analysis of samples in Table C. We are convinced that even many of these are genuine wines inasmuch as they are made from grape juice, not, however, in the Médoc but most probably in London. They are, in fact, the so-called "basis wines." As will be readily seen from the analysis, they are characterised by a high amount of alcohol (due to added spirit), high sugar and low tannin, low nitrogen and feeble colour. In some cases the addition of glycerine is obvious. Grape juice contains little tannin and, of course, is white in colour. The colour of the basis wine may be derived from a small

basis wines to which it is probable that glycerine is sometimes added.

SOME EXPERIMENTS BEARING UPON THE EFFECTS OF CLARET ON THE CHEMICAL PROCESS OF DIGESTION.

In recording the results showing the effects of claret and other wines upon the processes of digestion it should be stated that the present experiments were of a purely chemical and not physiological kind. That is to say, the experiments were conducted *in vitro*, employing artificial gastric juice and pancreatic juice respectively. Nevertheless, the results are of comparative interest as indicating at any rate the influence of wine and of claret in particular on the chemical process of digestion. Whatever may be the effect shown in experiments conducted *in vitro*, it must be remembered that *in vivo* good wine has a favourable influence upon the gastric function, which would, it is not unlikely, more than compensate for any discrepancy seen to exist in an experiment in which the effect of wine upon the merely hydrolysing action of a ferment—pepsin or pancreatin—is tried. It is generally conceded that the net result of a moderate use of wines, and especially light wines, with meals is favourable because they induce an increase of appetite and gastric secretion, and thus it is conceivable that even if the mere chemical process of digestion is interfered with at all such interference would be completely balanced by the healthy stimulus given to the gastric function. Upon this effect of wines is, in fact, based their use in health and disease. It will be seen from Table F that light natural clarets have only a trifling inhibitory and practically negligible effect upon the chemical activity of the gastric ferment, while there is a small retarding influence in the case of pancreatic digestion. Apparently those clarets which are of a light delicate character retard the processes of chemical digestion least, and in this category we must, of course, place the older "classed" wines. Nevertheless, wines of the *vin ordinaire* type show only a small disturbing effect upon digestion, an effect which probably is not produced at all in the living organism owing to the stimulating action of wine on the gastric function. In Table G also are included the results of two experiments with a solution containing amounts of tannin occurring in different clarets. Contrary to expectation, these solutions showed practically no inhibitory effect on the digestion of albumin. According to this the tannin of red wine would not appear to interfere with the process of digestion and in this connexion it may be called to mind that an ordinary cupful of tea contains a good deal more tannin than does an equal volume of claret. Also in the same table the results are shown of the effects on digestion of pure grape juice grown in the Médoc. Here there is evidently a marked inhibitory action which is diminished, however, as the grape juice is diluted with water.

When the activity of pepsin is interfered with at all by red wines it is generally due, we find, to the colouring matter of the wine, for as the intensity of the colour increases so is the inhibitory effect of the wine upon the chemical process of digestion increased. And when the colour of the wine is taken out with animal charcoal we found (see number 18 in Table F) that the decolourised wine has no appreciably interfering effect at all upon the digestive process. As already pointed out, animal charcoal extracts from wine its colouring matters, its nitrogenous bodies, and its tannin, and since the nitrogenous bodies increase directly with the intensity of the colour and tannin has very little effect upon the digestive process, it would appear that the chief constituent of red wine that is inhibitory to the chemical process of digestion is a nitrogenous body closely associated with the colouring matter. This result is very interesting as tending to indicate that old wines with low intensity of colour and delicacy of character are, from the point of view of dietetics, better than young, robust, highly coloured wines. On the other hand, old wines are richer in volatile bodies other than alcohol, such as ethers and higher alcohols, than are young wines, and in some cases, at any rate, these bodies seem to have a slight retarding influence on the digestive process. Colour being absent in white wines these when of a light character have a smaller inhibitory effect as a rule than red wines. Lastly, when a claret was distilled and the resulting weak spirit from it made up to the original volume of the claret and added to digestive agents there

was practically no retarding effect. The distillate so tested was of the same alcoholic strength as the claret—i.e., 10 per cent.—and contained, of course, the volatile constituents of the wine, the colouring matters, &c., being left behind in the still. The actual result is shown in Table G. On the whole, therefore, we conclude that claret,

TABLE F.—*Digestion Experiments in Vitro.*

Description.	Pepsin. Percentage of albumin digested in 3 hours.	Pancreatin. Percentage of albumin digested in 3 hours.	Observations.
Leoville-Lascases.			
1. St. Julien, 1890 ...	85.60	50.00	—
Rauzan Séglé.			
2. Margaux, 1890 ...	84.00	—	—
Château Langoa.			
3. St. Julien ...	80.00	54.00	—
Château d'Issan.			
4. Cantenac, 1899 ...	81.00	—	—
Montrose St. Estèphe.			
5. Médoc, 1899 ...	79.40	—	—
Château Latour.			
6. Pauillac, 1890 ...	74.40	72.20	—
Château Haut Brion.			
7. Graves Red, 1899 ...	71.00	—	—
Château Pavie.			
8. Médoc, 1899 ...	60.00	—	—
Château Dauzac.			
9. Labarde, 1899 ...	64.20	—	—
Château Lagune.			
10. Ludon, 1890 ...	66.20	—	—
Ducru Beaucallou.			
11. St. Julien, 1893 ...	78.00	—	—
Château Lafite.			
12. Pauillac, 1895 ...	69.00	—	—
Berchevalle.			
13. St. Julien, 1890 ...	—	47.00	—
Kirwan.			
14. Cantenac ...	—	61.56	—
Château de Rayne.			
15. Sauternes ...	70.00	—	—
Petites Graves.			
16. Vin Ordinaire ...	80.00	—	—
Grand Sec.			
17. 1 ^{er} Vin de Graves ...	78.40	64.50	—
Vin Ordinaire.			
18. Médoc ...	80.00 (When decolourised 83.00)	82.05	Purchased in London.
Vin Ordinaire.			
19. Médoc ...	77.80	—	—
St. Julien.			
20. Bourgeois Wine ...	64.20	51.30	—
Claret.			
21. Bourgeois Wine ...	64.60	—	—
Côte.			
22. Vin Ordinaire ...	87.50	—	—

TABLE G.—*Digestion Experiments with Tannin, Grape Juice, and the Distillate of Claret.*

Description.	Pepsin. Percentage of albumin digested in 3 hours.	Pancreatin. Percentage of albumin digested in 3 hours.	Observations.
Tannin, 0.1 per cent. ...	92.00	—	—
Tannin, 0.2 per cent. ...	91.00	—	—
Grape juice (Médoc), pure ...	41.40	—	—
Grape juice, 20 per cent. diluted ...	61.00	—	—
Distillate of claret = Brandy 10 per cent. alcohol ...	60.00	—	—
Water and pepsin + 1 gramme of albumin	95.00	—	—

addition of a highly coloured wine or from the skins of other fruits. If wine is defined to be the fermented juice of the grape then such preparations may be entitled to the designation of wine, but it is obviously misleading to label them Bordeaux or Médoc wine as is invariably done and in some instances the name of a hypothetical château is printed on the label. Shippers and agents would materially protect the public against this form of fraud if they would make it a universal rule to have affixed to the bottle a label with some kind of guarantee printed upon it in the form of the name of the producer, importer, or agent. The importation of grape juice of course avoids the spirit duties and we are surprised that the revenue authorities do not take action summarily in the matter, since by this device they are deprived of so much duty on wine made necessarily from material imported from abroad. In any case, such wines should be labelled compulsorily with the words "British made." It should be mentioned, however, that a vigorous and successful action has been recently inaugurated against the sale of fraudulent wines of the class described and in Bordeaux a powerful "syndicate of defence," comprising some of the largest wine growers in France, has been formed with the view of protecting the public against this species of imposition.

As we have said, however, the result of our inquiry has shown that the proportion of mis-named wines offered to the public as compared with the genuine article is exceedingly small and suspicion, having regard to the duties on foreign wines, will easily fall on a so-called genuine Médoc which claims to be valued at a little over 6*s.* a bottle. But perfectly good, wholesome, genuine Médoc wine is obtainable at 1*s.* per bottle which, while bearing the characteristics of a Bordeaux wine, is simple in kind and somewhat short of the æsthetic qualities of more expensive wines. The price of a wine is, of course, entirely dependent on these qualities: it is flavour that is paid for in the case of wine, just as it is in so many other articles of consumption. The palate rules the price, but wine is wine after all. The cheaper clarets are produced in the north of the Médoc, in the islands of the Gironde, in the districts around Blaye, on the east bank of the Gironde, and from the "Palus" or low-lying districts, and are commonly drinkable in the second year. They are sound, wholesome wines of the bourgeois type and, of course, less delicate than the "classed" wines produced in the localities of Pauillac, St. Julien, or Margaux.

The land of white claret is chiefly the renowned district of Sauternes, though a considerable amount of white wines is grown in the bordering district of Graves. Strictly speaking, "vin des Graves" applies to those wines, both red and white, produced in the Graves district, although in this country the designation "Graves" nearly always implies a white wine. White claret is more often vin des Sauternes grown in the neighbourhood of Barsac, Priegnac, and Bommes. The composition of the wines of the Sauternes district shows wide variations, chiefly in regard to alcohol and sugar, and depends upon the variations in the quality of the grape. Broadly, there are three descriptions of wine—the very sweet (almost syrupy wines, recalling Tokay), the moderately sweet, and the dry. Examples of all three are given in Table D. As will be seen, the chief point of difference in the composition of a red and a white wine is the practical absence of tannin and colour in the latter, the juice being fermented after the removal of the skins. The "dry" wines in other respects resemble red wines, the amount of sugar, alcohol, and acidity, however, being in general higher while the percentage of albuminoids is lower consistently, as it were, with the absence of red colour. A somewhat high proportion of glycerine in the full, sweet wines will be observed to increase *pari passu* with the increased alcoholic strength. The sweet wines also contain a relatively high percentage of albuminoids.

We may next call attention to Table E in which the amounts of ethers, higher alcohols, and aldehydes in the various wines of the Gironde are compared. We believe that this is the first time that the analysis of wines has referred to these constituents and the results are of interest, first of all in showing that the higher alcohols and ethers in the wine are most frequently present in much the same ratio as in brandy—which if genuine is the distillate of wine in a simple still; and secondly, the amount of higher alcohols present increases with the age of the wine and when they occur in relatively large proportion the indication is generally in

favour of a heavy full-bodied wine. The full sweet Sauternes, for example No. 15, contain as much as 500 grammes of higher alcohols per 100 litres of alcohol present and a high figure is also reached by the dry Sauternes, while the average of a number of light clarets is between 160 and 109 grammes per 100 litres of alcohol present, a figure which is given by ordinary genuine brandies. The somewhat heavy character of Sauternes apart from

TABLE E.—*Volatile Ethers, Higher Alcohols, and Aldehydes in Clarets, &c., in Grammes per 100 Litres of Alcohol present.*

Description.	Volatile ethers calculated as ethyl acetate.	Higher alcohols.	Aldehydes.	Observations.
Leoville-Lascases.				
1. St. Julien, 1890... ..	231.00	116.00	5.60	—
Rauzan Séglis.				
2. Margaux, 1896	236.00	163.00	4.70	—
Château Palmer.				
3. Cantenac, 1899	252.00	170.00	6.20	—
Château Langoa.				
4. St. Julien, 1896... ..	265.00	227.00	4.50	—
Château d'Issan.				
5. Cantenac, 1899	284.00	160.00	5.00	—
Montrose St. Estèphe.				
6. Médoc, 1899	258.00	212.00	5.30	—
Château Latour.				
7. Pauillac, 1890	236.00	300.00	3.50	—
Petrus Pomerol.				
8. St. Emilion, 1900 ...	260.00	232.00	7.00	—
Château Haut Brion.				
9. Graves Red, 1899 ...	223.00	146.00	4.70	—
Château Pavie.				
10. St. Emilion, 1899 ...	223.00	250.00	6.20	—
Château Dauzac.				
11. Labarde, 1899	303.00	209.00	4.60	—
Château La Lagune.				
12. Ludon, 1890	190.00	217.00	5.40	—
Ducru Beaucallou.				
13. St. Julien, 1893... ..	400.00	264.00	5.00	—
Château Lafite.				
14. Pauillac, 1896	309.00	319.00	5.30	—
Château de Tastes.				
15. Sauternes	377.00	564.00	4.30	—
De Rayne Vigneau.				
16. Sauternes	335.00	363.00	5.90	—
Petites Graves				
17. Vin Ordinaire	297.00	500.00	5.60	—
Grand Sec.				
18. 1er Vin de Graves ...	463.00	184.00	5.40	—
Claret.				
19. Vin Ordinaire	232.00	137.00	5.00	Purchased in London.
Claret.				
20. Bourgeois Wine ...	270.00	109.00	NIL	"
St. Viden.				
21. Bourgeois Wine ...	300.00	109.00	5.40	"
Claret.				
22. Bourgeois Wine ...	245.00	109.00	5.40	"
Côtes.				
23. Vin Ordinaire	311.00	160.00	6.70	"
24. Médoc	325.00	170.00	6.00	"
Château Montrose.				
25. St. Estèphe, 1899 ...	270.00	200.00	5.00	"
Château Lafite.				
26. Pauillac, 1895	306.00	180.00	5.00	"

their relatively high alcoholic strength is probably in part due to the development of alcohols of the higher series. The ethers in Sauternes wines are, again, generally speaking, higher in amount than in the Médoc wines. The aldehydes vary but little, the highest (St. Emilion wine) being 7.00 and the lowest (an old Latour wine) 3.50. In certain instances a high proportion of higher alcohols corresponds with a relatively high amount of glycerine except in the case of wines of doubtful origin or

section and the others which we have quoted bearing upon the same subject, we should be inclined to say that unqualified practice and the sale of drugs by unqualified persons are alike forbidden in the Transvaal in such terms that the most ingenious quack should find even the registered company fraud insufficient to protect him.

The regulations framed by the Transvaal Medical Council for midwives naturally call for less comment than the Ordinance, affecting as they do a matter of less wide importance. They also appear not to differ in general principles from those framed by the Central Midwives Board, although variations in matters of detail might easily be found and noted for consideration whenever the last-named body proceeds to revise and to amend its rules in the light of its own experience and that of others. We observe, however, that the midwife already in practice has more stringent conditions to comply with in the Transvaal than with us and that the general fitness of the midwife for her position as apart from her training has been the subject of considerable solicitude to the Medical Council. In the case both of the existing midwife and of the one who asks for registration on the ground that she has received an education qualifying her to fulfil her duties the same condition obtains with regard to her character—that it must be attested by "a magistrate, or a minister of religion, or a medical practitioner of this colony;" and, again, her personal health is deemed to be of sufficient importance to her patients for a certificate to be demanded "signed by a registered medical practitioner in this colony to the effect that the applicant's state of health is such that no danger to her patients would be involved by her admission to practice as a certificated midwife." Both these rules, it will be observed, tend to render the medical profession at large responsible jointly with the Council and in co-operation with it for the selection of suitable women as midwives and the inclusion of trained nurses under the jurisdiction of the Medical Council will also be noted. The regulations affecting these accompany those relating to midwives and in these also the registered medical practitioner is prominent upon the list of those whose testimonial to the nurse's health and personal character is necessary.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMMITTEE was held on Jan. 25th, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair. The PRESIDENT announced that the Council had appointed Captain Leonard Rogers, I.M.S., as Milroy lecturer for 1907, and that he had selected as his subject Kala-azar, its Differentiation and Etiology.

The following gentlemen having passed the required examination were admitted as Members of the College: Joseph Arthur Arkwright, M.D. Cantab., L.R.C.P. Lond.; William Carnegie Brown, M.D. Aberd.; and Robert Fielding-Ould, M.A., M.D. Oxon.

Licences to practise physic were granted to 100 gentlemen who had passed the necessary examination.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen: Amellus Cyril Birt, L.R.C.P. Lond., M.R.C.S. Eng.; Henry Caird, M.B., Ch.B. Edin.; Herbert Chesson, L.R.C.P. Lond., M.R.C.S. Eng.; John Moore Collins, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Gerald Corcoran, L.R.C.P. & S. Ire.; James Gilkes, M.B., C.M. Edin.; Captain Frederick Harvey, R.A.M.C., L.R.C.P. Lond., M.R.C.S. Eng.; L.S.A.; George Haylett Lock, L.R.C.P. Lond., M.R.C.S. Eng.; Greer Edmund Malcolmson, M.D. Lond.; Percy Knowles Maspratt, M.B., B.S. Cantab., L.R.C.P. Lond., M.R.C.S. Eng.; John Ford Northcott, M.D. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Owen Herbert Peters, M.B., Ch.B. Melb.; Lieutenant John William Symth Seccombe, R.A.M.C., L.R.C.P. Lond., M.R.C.S. Eng.; Frank Blenkinsopp Skerrett, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Captain Lessel Philip Stephen, I.M.S., M.B., Ch.B. Aberd.; Philip Graham Storr, L.R.C.P. Lond., M.R.C.S. Eng.; Lieutenant-Colonel Thomas David Winter, R.A.M.C., M.R.C.S. Eng., L.S.A.; and Cyril Haworth Wright, M.B., Ch.B. Edin.

The following communications were received: 1. From the Secretary of State for the Colonies (Jan. 11th) in reply to the Registrar's letter informing him of the steps taken by

the Royal Colleges in the matter of tropical medicine. The letter was as follows:—

Downing-street, Jan. 11th, 1906.

DEAR SIR—I am directed by the Earl of Eglinton to acknowledge the receipt of your letter of the 3rd instant and to state that his lordship has perused it with interest and has learnt with satisfaction the arrangements which are being made by the Royal College of Physicians of London and the Royal College of Surgeons of England for the recognition of tropical medicine.

I am, Sir, your obedient servant,

The Registrar, Royal College of Physicians. FRED. GRAHAM.

2. From the Royal Sanitary Institute, inviting the College to appoint delegates to attend the congress of the institute at Bristol from July 9th to 14th, 1906. The invitation was accepted. The PRESIDENT nominated Dr. H. Handford as one of the delegates and the nomination of a second delegate was postponed. 3. From the secretary of the Royal College of Surgeons of England reporting some of the proceedings of its Council on Jan. 11th. 4. From the director of the Whitechapel Art Gallery thanking the College for its promised loan of pictures for March and April.

The PRESIDENT and the TREASURER drew attention to the portrait of His Majesty the King by Luke Fildes, R.A. The portrait had been procured partly by the surplus of money received for the seating arrangements for viewing the Coronation procession and partly by subscription.

On the nomination of the Council the following Fellows were elected councillors: Professor W. Osler, Dr. H. Radcliffe Crocker, Dr. H. B. Toth, and Dr. T. D. Acland.

Dr. F. H. CHAMPNEYS moved the following proposition, which was seconded by the SECOND CENSOR (Dr. NORMAN MOORE):—

That a committee be appointed to examine and report on the curriculum in midwifery and diseases of women. That the committee consist of all obstetric physicians and assistant obstetric physicians of the London medical schools who are Fellows of the College, with power to add to their number.

On the motion of Dr. L. E. SHAW, seconded by the THIRD CENSOR (Dr. FREDERICK TAYLOR), the following words were added to the proposition: "With the addition of four Fellows who have been deans of medical schools." The proposition was carried and the following four Fellows were nominated to serve on the committee in consequence of Dr. Shaw's proposal: Dr. H. G. Turner, Dr. R. H. P. Crawford, Dr. J. Fawcett, and Dr. A. Latham.

Dr. C. Theodore Williams was re-elected as a representative of the College on the Court of Governors of the University of Birmingham for three years from Jan. 1st, 1906.

Dr. Champneys was re-appointed as a representative of the College on the Central Midwives Board for one year from March 31st next.

The quarterly report of the College finance committee, dated Jan. 11th, 1906, was received and adopted.

A report was received and adopted from the representative of the College on the General Medical Council (Dr. Norman Moore) concerning the meetings in November and December, 1905.

A report from the committee of management dated Dec. 18th, 1905, was received and adopted. The report recommended that the course of laboratory instruction in public health at the Royal Institute of Public Health, London, should be recognised as fulfilling the requirements of regulations for Part I. of the examination for the diploma in Public Health.

A second report from the same, dated Jan. 4th, was received and adopted. It was based on the following reference from the Royal College of Surgeons of May 11th last:—

That it be referred to the committee of management to consider and report as to the desirability of treating chemistry, physics, and biology as subjects of preliminary education and of requiring that an examination in these subjects should be passed before the recognition of the commencement of medical studies; and to further report as to the desirability of the two Colleges approaching the University and other examining bodies with a view to adopting a five years' curriculum of professional study from the date of passing the preliminary science examination.

The report was a very full and elaborate one and the conclusions arrived at were as follows:—

1. That it is undesirable to treat chemistry, physics, and biology as subjects of preliminary education. 2. That it is undesirable to require an examination in chemistry, physics, and biology to be passed before the commencement of medical studies; and to further report as to the desirability of the two Colleges approaching the University and other examining bodies with a view to adopting a five years' curriculum of professional study from the date of passing the preliminary science examination.

in the matter of lighting, whilst the water-supply and general arrangements for washing are better than they used to be on this class of boat. But these are the only words of commendation that in most cases can be used. Practically all the vessels which come into the Port of London with immigrants are foreign vessels, and it is certain that some of these are in a very insanitary condition and offer the most inadequate accommodation to their wretched living freight. The sexes are mixed, there is inadequate lavatory provision, and, to speak generally, the state of some of these ships may be described as simply filthy. In this connexion the nationality of the incomers must be borne in mind and too much blame must not be attributed to those responsible for the state of the vessels. The class of immigrants to Great Britain is, on the whole, bad, though it is no worse now than it used to be. The majority of those who come to London are Polish Jews or Jews from Eastern Europe. Looking back to the statistics of 1904 we find that of 82,848 aliens known to have settled in Great Britain 46,095 were either Russians or Poles and at least a similar ratio of nationalities is being maintained. They are, as a rule, of indifferent physique, wretchedly poor, and unclean in their habits, and however good the quarters offered them might be at the beginning of the voyage, short as that voyage usually is they may be trusted to foul their nest. With regard to their poverty they are supposed to be in possession of £5 before permission is given to enter the country, but this regulation since the Act became law has been on many occasions waived, mainly on the immigrant proffering the plea that he was the victim of religious persecution in Russia. There are, however, more rejections made for economical reasons than for physical disabilities.

Transmigrants having prepaid tickets are not liable to medical inspection or general inquisition at the immigration ports of Great Britain but opportunity is always taken for medical examination lest there should be among these people any disease coming within the meaning of the Public Health Act.

THE MEDICAL PROFESSION IN THE TRANSVAAL.

WE recently dealt with the regulations for medical practice in the Orange River Colony¹ and we now have before us a copy of the Ordinance enacted in 1904 in the Transvaal "for the registration of medical practitioners, dentists, chemists and druggists, midwives and nurses, and for the better regulation of medical practice and the sale and dispensing of drugs, medicines, and poisons," and also a copy of the regulations for midwives and trained nurses framed under the Ordinance by the Transvaal Medical Council which it has called into being. Of the precise date upon which by the proclamation of the Lieutenant-Governor the main portion of the Ordinance came, or will come, into force we are not aware, but the section which provided for the constitution of the Transvaal Medical Council, and of the Transvaal Pharmacy Board became operative at once, and the regulations for midwives referred to are a sample of the industry of the former body. The council consists of eight medical practitioners and two dentists, six of the former and one of the latter being elected by their brother practitioners and the others being appointed by the Lieutenant-Governor, who has to nominate as one of the medical members the medical officer of health of the colony. The board consists of one member of the council deputed by it to act and of five chemists and druggists, two of them appointed by the Lieutenant-Governor and the other three elected.

Both the Ordinance and the regulations for midwives are of interest to the medical profession in England because they must be deemed to have been the work of their brethren in a great and new colony who have based them upon corresponding laws and regulations in England or have studied these and have declined to adapt portions of them to their own use. In the Transvaal Ordinance a point of difference from the English law arises from the natural circumstances of a colony, so that we find provision for the admission to practice of medical men and dentists holding the degrees,

diplomas, or certificates of foreign or colonial universities or medical schools. These are to be granted certificates subject to conditions securing their efficiency, with a further requirement of proof "that by the laws of the country in which such degree or diploma was conferred, British subjects legally qualified to practise as medical practitioners or dentists in Great Britain and Ireland are afforded privileges equivalent to those granted by registration under the Ordinance," a form of reciprocity to which the most ardent advocate of free trade in commercial matters should not object.

In the portion of the Ordinance which relates to pharmacy and to the sale of poisons we note a section which provides severe penalties not only for any "medical practitioner, chemist and druggist, veterinary surgeon, or other person entitled to keep or sell poisons" who shall contravene the regulations relating to these, but also for any person thus defined "who shall sell or keep for sale by himself or any apprentice, servant, or agent any medicines or drugs of bad quality." Generally speaking, the sale of poisons is to be conducted upon similar lines to those followed in England—that is to say, a schedule divided into two parts is appended to the Ordinance in which various poisons are entered, with provision for the addition of others when required, the one part of the schedule containing names of poisons which must not be sold unless the purchaser is known to, or introduced to, the seller and in the case of which full particulars of the sale have to be recorded, the second part containing those for which a label will be sufficient bearing the name of the article, the word "poison," and the name of the seller. It is interesting to note in this connexion the consideration given by the Transvaal legislature to the sale of vermin-killers containing poison. A divisional court recently held² that a compound known as "Rankin's ointment" sold for the destruction of vermin in the human hair must be classed in Part II. of the schedule of poisons as a vermin-killer, although it contains a poison which sold by itself would come under the provisions of Part I., there being special mention of poisons compounded for use as vermin-killers in Part II. and no mention of them in Part I. The Transvaal Ordinance has anticipated the difficulty which was not foreseen in England when vermin-killers were placed specifically in Part II., for it says in Part II. of its schedule that "vermin-killers, compounds containing poisons prepared for the destruction of vermin, if not subject to the provisions of Part I. are in Part II.," and it definitely includes vermin-killers in Part I. if these are preparations of poisons subject to Part I. when uncompounded. This is certainly better than to allow drugs so dangerous that their sale is to be guarded specially when they are pure to be sold with the mere protection of the label when they are associated with other substances and are ostensibly sold for an apparently harmless purpose.

The most important feature, however, of the Transvaal Ordinance in the opinion of many will be the introduction in the colonial law of the provision which it appears useless to hope for in the mother country that no person "shall be entitled to practise as a medical practitioner or dentist unless he has obtained a registration certificate," coupled with a section forbidding the illegal use of medical titles in terms similar to those to which we are accustomed but better calculated to cover the cases which are likely to arise. No less interesting to us also is a section which orders that "no society or association of persons who are not registered under this Ordinance may use the descriptions or titles provided herein nor may any company incorporated by law carry on the business of chemist and druggist unless the managing director of such company is a duly registered chemist and druggist and unless the name of the assistant, who himself must be qualified under this Ordinance, managing such shop or other place in which the business is carried on by the company is conspicuously posted in such shop or place; provided that anything which would be an offence under this Ordinance if committed by an individual shall be an offence by every director of a company if committed by such company; provided, further, that nothing in this section shall be held to prevent the employment by any such registered dentist or chemist and druggist, as the case may be, of an unqualified assistant or assistants for the purpose of mechanical dental work or of compounding drugs and dispensing medicines under his personal supervision." Subject to any questions of detail which may arise in the process of enforcing this

¹ THE LANCET, Oct. 7th, 1905, p. 1042.

² See THE LANCET, Jan. 6th, 1906, p. 61.

Looking Back.

FROM

THE LANCET, SATURDAY, Feb. 2nd, 1828.

MIDWIFERY seems to have made less progress in Ireland, than in any other part of the British empire. By this observation, we do not mean that there have not been at all times, in Dublin, and in the principal towns of the provinces, men competent to the application of obstetric science in the most efficient manner; we only mean to assert, that the number of practitioners, writers and teachers, has been less in proportion to the population, the wants of students, and the general mass of the profession of that country, than in either England or Scotland. Until very lately, there were many districts in the island, to the extent of twenty or thirty miles in circumference, in which no practitioner of midwifery resided; and where, in consequence of this deficiency, the most melancholy cases have occurred without the aid of art being attainable. Its medical literature cannot yet exhibit a single treatise in use among students, or even known as a work of reference in this branch of science; while Britain, both north and south, has been profuse in productions of this description. We need scarcely quote the names of Hunter, Denman, Blundell, Davis, Burns, and Hamilton, as a contrast to the Clarkes, Evorys, and Labatts of Dublin—men, who, though highly distinguished as accoucheurs, have left no record of their experience to profit posterity, or to exempt their country from the imputation of defective authorship. It may surprise our English and Scottish readers still more, when we assure them that, in a city so large as Dublin, and a school where there are so many prosecuting their studies, there are but two professors of midwifery, and these by no means comparatively well attended. In the University, or School of Physic, there is no professorship of this kind existing; the College of Surgeons very properly founded one, but owing to the neglect of the gentleman appointed, and still more to the want of a clinical establishment for the illustration of his precepts, his lectures, which, indeed, were but seldom delivered, were all but entirely neglected; the Lying-in Hospital, for causes which we shall immediately point out, is but ill-calculated to realise the objects of a school of midwifery; and to supply this defect of obstetrical instruction, there is not a single private teacher of the art, that we are aware of, in the Irish capital.

MEDALS TO MERITORIOUS STUDENTS.

THE custom of distributing prizes or rewards to the most intelligent students, is, we are glad to see, now coming into general use. It is a practice which, in our estimation, is calculated to call forth a noble spirit of emulation and generous rivalry amongst the medical pupils, and, consequently, has our warmest approbation.

On Thursday so-night, Dr. Hopkins's prize, a splendid gold medal, was presented in the Webb-street Theatre, to Mr. ROBERT CORBIN, being the successful candidate for the best essay on the "Nature and Treatment of Protracted Labour."

On the following Saturday, the silver medal was given to Mr. W. BLOXAM for the second best essay on the same subject. The prizes were not adjudged until after the parties had undergone a rigorous public examination, in which they were called upon to defend every point of their theses, thus affording a farther guarantee of their competency. The gold medal is of considerable value, and is a beautiful specimen of art: on one side is a device both classical and apposite—Juno, the reputed patroness of child-birth, is seen with her peacocks watching over a female who is reclining upon a couch, having apparently been recently delivered. A female attendant is kneeling and holding in her arms a new-born infant. On the reverse of the medal is a Latin inscription, expressive of the object for which the medal was given. In confirmation of the beneficial results which we have said are likely to arise from this public mode of rewarding students, we may here mention the fact, that at St. Thomas's Hospital, where Mr. Green has offered a medal for the best set of clinical reports, a spirit of emulation and inquiry has been manifested amongst many of the medical students, which it is truly gratifying to witness. To adopt a homely phrase,—every man is put upon his mettle.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8891 births and 4834 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 18.3, 16.7, and 15.8 per 1000 in the three preceding weeks, rose again to 15.9 per 1000 last week. In London the death-rate was 15.3 per 1000, while it averaged 16.2 per 1000 in the 76 other large towns. The lowest death-rates in these towns were 8.1 in Smethwick, 9.2 in West Ham, 10.0 in Northampton, 10.8 in Bournemouth, 11.4 in Hornsey and in Aston Manor, and 11.5 in King's Norton; the highest rates were 20.8 in Stockton-on-Tees, 21.1 in Liverpool, 21.5 in Stockport, 21.6 in Sunderland, 23.2 in Tynemouth, 23.8 in Great Yarmouth, and 24.6 in Preston. The 4834 deaths in these towns last week included 385 which were referred to the principal infectious diseases, against 464, 389, and 369 in the three preceding weeks; of these 385 deaths, 110 resulted from whooping-cough, 93 from measles, 73 from diphtheria, 46 from scarlet fever, 45 from diarrhoea, and 18 from "fever" (principally enteric), but not any from small-pox. In Brighton, Norwich, St. Helens, Huddersfield, Cardiff, and ten other smaller towns no deaths from any of the principal infectious diseases were registered last week, while they caused the highest death-rates in Wolverhampton, West Bromwich, Aston Manor, Leicester, Stockport, Burnley, Preston, Leeds, and West Hartlepool. The greatest proportional mortality from measles occurred in Wolverhampton, Aston Manor, Preston, and Leeds; from scarlet fever in West Hartlepool; from diphtheria in Hornsey and Merthyr Tydfil; from whooping-cough in Birmingham, Aston Manor, Leicester, Stockport, and Burnley; and from "fever" in West Bromwich. No death from small-pox was registered last week in any of the 76 towns, and no case of this disease was under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Jan. 27th, was 2923, against 3299, 3062, and 3066 on the three preceding Saturdays; 322 new cases were admitted during the week, against 291, 257, and 328 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 434, 370, and 299 in the three preceding weeks, further declined last week to 293 and were 120 below the average number in the corresponding periods of the four preceding years. The causes of 48, or 1.0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Hull, Newcastle-on-Tyne, and 45 other smaller towns; while the largest proportions of uncertified deaths were registered in Portsmouth, King's Norton, Liverpool, St. Helen's, Warrington, Blackburn, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19.8, 17.8, and 18.2 per 1000 in the three preceding weeks, further rose to 19.6 per 1000 during the week ending Jan. 27th, and was 3.7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 14.6 in Aberdeen and 17.0 in Leith, to 21.1 in Perth and 29.7 in Dundee. The 670 deaths in these towns included 31 which were referred to measles, 13 to diarrhoea, 12 to diphtheria, seven to whooping-cough, four to "fever," and two to scarlet fever. In all, 69 deaths resulted from these principal infectious diseases last week, against 80, 61, and 53 in the three preceding weeks. These 69 deaths were equal to an annual rate of 2.0 per 1000, which was 0.7 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 33, 28, and 24 in the three preceding weeks, rose again last week to 31, of which 25 occurred in Glasgow, three in Dundee, and two in Paisley. The deaths from diarrhoea, which had been 20, 16, and 19 in the three preceding weeks, further declined to 13 last week, and included seven in Glasgow and two in Dundee. The fatal cases of diphtheria, which

The PRESIDENT then dissolved the Comitia.

Further evidence of the occurrence of a chronic toxæmia had been found by Dr. Ainslie who examined numerous arteries from various parts of the body and found that a condition of chronic endarteritis was constant and often extremely well marked, though irregular in distribution even in cases of general paralysis in which senility could be excluded. About the same time Dr. D. Chalmers Watson had advanced very similar views regarding the pathogenesis of tabes dorsalis. In 1902 the lecturer, along with Dr. G. Douglas McRae and Dr. J. Jeffrey, had commenced a bacteriological research. They found that a diphtheroid bacillus was specially prominent in the gastro-intestinal and respiratory tracts in cases of general paralysis and that a similar organism could frequently be isolated from the brain. They advanced the hypothesis that general paralysis of the insane was the result of a chronic toxic infection from the respiratory and alimentary tracts, permitted by general and local impairment of the defences against bacteria and dependent upon the excessive development of various bacterial forms but especially upon the abundant growth of a Klebs-Löffler bacillus of modified virulence which gave the disease its special paralytic character. In their later investigations Dr. McRae and he had simply been putting this hypothesis to the test and every step forward had been

chair.

A letter from the Clerk of the Privy Council was read transmitting a copy of a resolution passed by the guardians of the Lutterworth union suggesting the reduction from 20 to seven of the number of midwifery cases qualifying a candidate to enter for the Board's examinations. The answer of the Board was that it did not approve of the suggested reduction. A communication was received from Dr. A. J. Wallace asking for the opinion of the Board as to his right in certain circumstances to refuse to sign the certificate of instruction required under the regulations from candidates entering for the Board's examinations. After some discussion it was determined that it was outside the jurisdiction of the Board to decide whether anyone was bound to certify and an answer to that effect was directed to be sent to Dr. Wallace. A letter was then read from Dr. T. Eustace Hill, county medical officer of Durham, as to the extent of the exemption conferred by Rule E 21. This rule provides that nothing in Section E of the rules framed under the Midwives Act "shall apply to certified midwives exercising their calling in hospitals, work-houses, or Poor-law infirmaries under the supervision of a duly appointed medical officer." Section E contains the rules for regulating, supervising, and restricting within due limits the practice of midwives. The reply of the Board to Dr. Hill was to refer him to the Midwives Act and to the rules framed under it in accordance with that part of Section 3 of the Act dealing with the duties and powers of the Board.

Looking Back.

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had been 13, eight, and five in the three preceding weeks, rose again last week to 12, of which eight were registered in Glasgow, two in Edinburgh, and two in Dundee. The deaths from whooping-cough, which had been 11, five, and two in the three preceding weeks, rose again to seven last week, and included four in Glasgow and two in Dundee. Of the four fatal cases of "fever" two were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 136, 126, and 114 in the three preceding weeks, further declined last week to 110, and were 53 below the number in the corresponding period of last year. The causes of 28, or more than 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·7, 21·7, and 20·1 per 1000 in the three preceding weeks, rose again to 21·2 per 1000 during the week ending Jan. 27th. During the past four weeks the death-rate has averaged 21·2 per 1000, the rates during the same period being 16·9 in London and 18·3 in Edinburgh. The 154 deaths of persons belonging to Dublin registered during the week under notice were eight in excess of the number in the preceding week and included five which were referred to the principal infectious diseases; of these, three resulted from diarrhoea, and one each from diphtheria and whooping-cough, but not any from small-pox, measles, or "fever." These five deaths were equal to an annual rate of 0·7 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 0·8 in Edinburgh. The fatal cases of diarrhoea, which had been one in each of the three preceding weeks, increased last week to three. The 154 deaths in Dublin last week included 23 of children under one year of age and 51 of persons aged 60 years and upwards; the deaths of infants showed a slight decline from the number recorded in the preceding week, while those of elderly persons showed a considerable excess. Eight inquest cases and eight deaths from violence were registered, and 70, or nearly half, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon F. W. Stericker to the *Dryad*, Staff Surgeon J. K. Robinson to the *Nisibe*. Surgeons: P. W. MacVean to the *Skirmisher* (lent); M. W. Haydon to the *Adventure* (lent); R. S. Osborne to the *President*, for three months' course of hospital study; A. la T. Darley to the *Ganges* for *Donscarven II.*; J. Stoddart to the *Pembroke*; L. C. Robinson to the *Foreright*; and G. O. M. Dickenson to the *Forward* (lent).

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Inspector-General of Hospitals and Fleets Richard William Coppinger has been placed on the Retired List at his own request (dated Jan. 25th, 1906).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. M. F. Shine is appointed Officer Commanding Station Hospital, Deesa. Colonel O. A. Webb is appointed Administrative Medical Officer at Cork and Colonel Martin is appointed Principal Medical Officer, Welsh and Midland Command. Lieutenant-Colonel C. W. Thiele, Lieutenant-Colonel T. B. Winter, Captain P. G. Hyde, Lieutenant R. E. Humsfrey, Lieutenant G. G. Tabuteau, Lieutenant W. Parsons, and Lieutenant C. W. O'Brien have left England for duty in India.

INDIAN MEDICAL SERVICE.

Surgeon-General Lionel D. Spencer, C.B., retired, to be Honorary Surgeon to the King, vice Surgeon-General J. M. Cunningham, C.S.I., deceased (dated Jan. 27th, 1906). Major W. Molesworth, who has been on the staff of Lord Amphill in India, is selected to serve as medical officer to Sir Arthur Lawley on his taking up his duties as Governor of Madras.

The following gentlemen were successful at the examination for admission to the Indian Medical Service held on Jan. 23rd and four following days:—

Names.	Marks.	Names.	Marks.
H. W. Pierpoint	3761	R. H. Lee	3377
W. D. H. Stevenson	3543	G. E. Malcolmson	3113
H. P. Cook	3510	F. P. Wernicke	3111
P. S. Mills	3501	P. Heffernan	3053
H. G. Gharpurey	3492	W. A. Meams	3023
W. J. Fraser	3451	D. M. C. Church	3021
D. C. V. Fitz Gerald	3353	S. T. Crump	3014
C. R. O'Brien	3318	H. S. Hutcheon	2836
R. S. Kennedy	3252	R. G. G. O'Leary	334
C. A. Godson	3249	W. B. A. K. Cullen	223
B. Hithani	3248	J. McG. Skinner	297
N. H. Hume	3222		

44 candidates (29 of whom had university degrees) competed for the 23 vacancies. 18 of the successful candidates possessed university degrees.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Algernon E. L. Wear to be Surgeon-Captain (dated Jan. 16th, 1906).

DEATHS IN THE SERVICES.

Surgeon-General William Frederick de Fabek, I.M.S., retired, on Jan. 18th, at his residence in London, in his seventy-second year. He entered the service as assistant surgeon in 1857, was promoted surgeon in 1869, surgeon-major in 1873, brigade surgeon in 1885, deputy surgeon-general in 1886, and retired with the rank of surgeon-general in May, 1890. He was present at the siege of Sevastopol in the Crimean war of 1854-55 and was at the assault on the Redan (medal with clasp). He also served in the Indian Mutiny, 1857-58 (medal).

ARMY MATTERS IN GENERAL.

No little consideration has been given of late to the discussion of army schemes in general and to the most suitable organisation in particular of our land forces for the purposes of home defence. All that the new Secretary of State for War has so far said and done has tended to justify the expectations which his appointment has raised. Everybody hopes that some really adequate and practicable measure may be the final outcome of all that has of late years been taking place at the War Office. Lord Roberts, who is evidently deeply impressed with the gravity of the situation and indefatigable in his efforts to make the nation realise it, has also been recently speaking at Liverpool in advocacy of his views; and a proposal to hold a schoolboys' rifle meeting at Bisley has met with a generous response from headmasters and is likely to be carried to a practical conclusion. So that it will not be from any lack of zeal and activity in various directions if we fail to reach some desired end. It is stated that among other changes in the near future there is to be an increase in the auxiliary branches of the Royal Army Medical Corps. What we desire to see, however, is that in connexion with any forthcoming big scheme of reorganisation the subject of our sanitary and field medical arrangements for war should also be taken up and considered. Meanwhile, everyone feels that the new War Minister is quite right not to be hurried in his attempt to accomplish the extremely difficult task which he is undertaking. So far as his speeches at Edinburgh, his concessions to the Volunteers, and his assurance that the Government is not likely "to do anything that would tamper with the efficiency of the army or navy" are concerned, there cannot well be any ground for dissatisfaction. It is needless to say that the next Army Estimates will be unusually interesting and instructive.

LORD ROBERTS AND SIR FREDERICK TREVES AT MANCHESTER ON THE ADVANTAGES OF ARMY TRAINING.

Lord Roberts in prosecution of his patriotic undertaking in the matter of Imperial defence addressed a meeting at Manchester on Jan. 30th in which he dwelt upon the practical and other advantages to be derived from such national and other training as he had been so strenuously advocating. We are very glad to notice that he was strongly supported on that occasion by Sir Frederick Treves on the grounds of national health. There is no need to call attention to the views published from time to time in these columns on the subject but we may add that, in our belief, Sir Frederick Treves was giving expression to an opinion generally held by members of the medical profession regarding the salutary effect which such a movement as this

advocated by Lord Roberts might have upon the physical condition of the people. Sir Frederick Treves, in the course of his remarks, said that the report of the Commission on Physical Degeneration was not very pleasant. It contained signs and hints of something that was coming, a weakness in our race, which if not paid heed to must lead to that degeneration which most of them feared. In his opinion the most striking feature of the age was the effect on the nervous system of the conditions of our modern life. The best remedy for this was perfect physical health, such as was gained by open-air exercise. That could be obtained by the system of military training suggested by Lord Roberts.

The *Broad Arrow* states that the administration of hospital services hitherto performed by the Royal Engineers has been handed over to the Director of Barrack Construction to whom, or to his representatives, should be addressed all communications respecting hospital buildings and their accessories which have until now been forwarded to the Royal Engineers.

Correspondence.

"And aliter partem."

ENTERIC FEVER IN THE ARMY.

To the Editors of THE LANCET.

SIRS.—Although most medical men who saw service at the front in South Africa recognise the impossibility of sterilising all water used either by boiling, filtering, or the addition of chemicals in tablet form (carefully elaborated and prescribed by armchair hygienic authorities on the prevention of enteric fever in a campaign), all will agree that, wherever possible, every opportunity should be taken to get the men to obtain water which has been boiled. Whilst serving with General Plumer's force I had occasion to remark that the Australians and New Zealanders preferred to eat and every halting place to drink tea. When a lime juice ration was served out very often they would not drink it. It was once or twice suggested that a double ration of tea would not only have given greater comfort to the soldiers but also have insured double the quantity of water being boiled. Thus they were always ready to fill their water bottles with tea before trekking. At the end of each day's trek it was a common sight to see them h-mantle a farm house to obtain firewood to boil the "billy." Had full advantage been taken of this property to drink tea I was convinced the incidence of enteric fever would probably have been less. However, experience bore out that this was not so. The worst attack of enteric fever that the New Zealanders and Queenslanders with Plumer had was after a rest of two weeks just outside of Wakkerstroom, where they availed themselves of the opportunity of getting copious supplies of tea from the food force parties. However, as previous to the night at Onverwacht, after which we went into Wakkerstroom to rest, we had been out more than three or four days in a standing camp, we did not have the opportunity of exposing the force to the danger arising from a lengthy residence near its own or another soldier's excrement. Consequently (unless the epidemic of enteric fever was carried by "the filthy foot of a black-fellow"), my idea that it was best for each section of four to boil their own water—and to encourage them to do so—should have given them more tea—was not put out of court by the Wakkerstroom experience.

Boiling of boiled water it is necessary to remember that water is not very insipid. Also my experience was that the men and even the medical officers, when really tired, often from thirst (similar to that so graphically described by the late George Sayers in "With Kitchener to Khartoum") preferred to drink water, not only else was possible. Until that time was when I once never turned about the people's divers of enteric fever and dysentery. The boiling out of Portland filters to each company was an experiment which, with our colour, was not a success, owing probably to the fact that we had no special facilities to get to look after the sanitation of the troops. In the later stages of the war, after often 100 miles of march, by night with stripped camp, and no wheel transport were out on patrol, each man was left with a rifle and three last-bills, the only chance of getting a drink of boiled water was from a "billy" (in which

each section of four generally made tea). For large standing camps and troops at the base it has long been known that the best method of treating water is to boil it.

For the benefit of those who seem to claim some originality for the idea I may mention that on the first page of Xenophon's *Anabasis*, Book II., reference is made to the using of the captured wagons, shields, &c., as firewood with which to boil the water for the 10,000. However, for mounted infantry and cavalry out on patrol, night marching, and doing work such as we did in South Africa, it was simply impossible to carry out sterilisation of the water on a large scale. It is worthy of note that in the irregular corps many of the men over thirty suffered less from enteric fever than the young regulars and the more youthful members of their own corps. Speaking for the New Zealanders and Queenslanders, the elder men were also able to withstand the wear and tear of the campaign better. Also their keenness for active service was not one whit less than that of the young bloods. From what I saw in South Africa and have since read I should think that inoculation against enteric fever, the taking of quinine if exposed to malaria or dengue fever (as we were in the Bushveldt and Pongola), the plentiful supply of soap, the frequent fresh issues of underclothing to prevent the miseries caused by body lice, together with instruction by the medical officers on the transports as to simple lines of health, the provision of special sanitary orderlies for each company, an expert sanitary officer attached to the staff to disengage the chief staff officer from selecting an old camping ground, also to point out the advantage of a frequent change of camp, and the necessity of filling in latrines, would go far to reduce the incidence of enteric fever, dysentery, and other preventable diseases.

I am, Sirs, yours faithfully,

J. S. FURDY, M.D., C.M. Aberd., D.P.H. Cantab., F.R.G.S.

Late Surgeon-Captain New Zealand Militia.
Port Said, Jan. 10th, 1905.

THE PREVALENCE OF CONTAGIOUS DISEASE: A SUGGESTED INQUIRY.

To the Editors of THE LANCET.

SIRS.—During the past 20 years I have lived more abroad than in England and have noticed that amongst Americans, Colonials, Germans, and Japanese there is a curious unanimity of opinion that the modern British islander is degenerating. Some well-educated Germans have told me that one of the main causes of the decay of the Spaniards and the Portuguese was the prevalence of "specific" disease and intimated that the same cause is deteriorating the British race. It is all very well to laugh at these thoughtless foreigners and to ascribe their views to envy and prejudice but every year our population becomes more and more urban and a larger proportion thereby come in contact with contagious disease. Is it therefore possible that the British are commencing to show the effects of the *spirochaeta pallida*? Permit me to suggest that the medical profession should endeavour to get a return for a period of three months of all cases treated at 12 of the largest hospitals in the kingdom, the direct or indirect cause of which is considered to be contagious disease. A return of this character would not cost much money and could commence on any date convenient to the hospital; the result might be of national importance and could not fail to be of interest to the medical profession.—I am, Sirs, yours faithfully,

H. N. ROBINSON, M.R.C.S. Eng., L.R.C.P. Lond.
Jr. of Constitutional Clinic, Piccadilly, W., Jan. 25th, 1905.

THE HEALTH OF MADEIRA.

To the Editors of THE LANCET.

SIRS.—As reports have been disseminated to the effect that either bubonic plague or some other infectious disease is prevalent in Madeira it is advisable that the medical profession should be informed that these rumours are absolutely without foundation. Some six weeks ago several so-called suspicious cases were removed to the "Lazareto," a building used for isolating cases liable to spread infection, the persons who had been in contact with these patients being also removed and isolated in a separate part of the same building. Shortly afterwards it began to be said (rightly or wrongly) that these isolated individuals were not receiving that care

and attention which were necessary; the "lazareto" was in consequence stormed by the populace which had always doubted the genuineness of the existence of infectious disease. The inmates were found to be healthy with the exception of five patients who were suffering from more or less trivial ailments, and since this occurrence there have been no further cases of so-called plague. It turns out that the whole affair has been a scare purposely got up by certain interested individuals in Madeira from political motives which need not be considered further.

I write this with the full concurrence of the senior English physician in the island, Dr. M. O. Grabham, and we both wish not only to reassure the friends of visitors at present staying here but to make public the fact that intending visitors need have no fear of running any danger on their arrival.—I am, Sirs, yours faithfully,

J. GEDDES SCOTT, M.R.C.S. Eng., L.R.O.P. Lond.

Funchal, Madeira, Jan. 20th, 1906.

THE DIRECT REPRESENTATION OF SCOTLAND ON THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—Rumour has been asserting that I do not intend to be a candidate for the suffrages of Scottish practitioners at the next election in October of this year for the post of their Direct Representative. Will you kindly grant me the kind privilege of saying publicly that statements to that effect are untrue and misleading?—I am, Sirs, yours faithfully,

Dingwall, N.B., Jan. 24th, 1906.

WILLIAM BRUCE.

X RAY DOSAGE.

To the Editors of THE LANCET.

SIRS,—In the interesting article on two cases of leukaemia treated by x rays in THE LANCET of Jan. 27th, p. 211, Dr. W. Fronsidge Bruce regrets the indefinite manner in which the dosage of the rays is stated. I think, however, that more essential details are there noted than seems customary in the reports of x ray treatment.

For example, in Mr. A. Marmaduke Sheild's case of mammary cancer, recorded in THE LANCET of Nov. 18th, 1905, p. 1464, Dr. H. Lewis Jones in reporting the x ray treatment only tells us that the applications lasted 12 minutes, that the tubes were "soft" or "medium," and that the secondary current was 0.5 to 0.8 milliamperes. No mention is made of the strength of the primary current nor even of the distance of the tube from the diseased tissue. When it is considered that a tube at eight inches from the skin gives it more than twice the irradiation it would do at one foot, it is evident that the exact distance is an important datum. The capacity of the coil, the number of warts in its primary, the rate of interruptions, the particular "break" used, the distance of the tube and its equivalent spark gap, are all such important factors in the production and application of x rays that it seems a pity to omit any of them in reporting the treatment of a case.

As to the value of recording the milliamperage of the tube circuit with the instruments now made for that purpose, opinions seem to differ. From my own observation of the behaviour of an average milliamperemeter under varying conditions, I suspect they do little more than indicate their own eccentricities, and feel convinced that a far more accurate estimate of what the tube is yielding can be made from a consideration of the energy of the primary current in conjunction with the state of the tube and the frequency and efficiency of the interruptions.

I am, Sirs, yours faithfully,

Ballschullish, Jan. 29th, 1906.

W. D. ANDERSON.

PHYSIOLOGICAL TESTS FOR PHARMACEUTICAL PREPARATIONS.

To the Editors of THE LANCET.

SIRS,—May I trespass briefly on your space once more? My letter of Jan. 20th has served its main purpose by eliciting the information I desired, but it appears in part to have conveyed a not wholly correct impression of my attitude

towards this question. I do not think that I under-rate the importance of such pharmacological researches. My contention is simply this—that before accepted standards are officially remodelled we should have evidence as complete and irrefragable as possible that the older methods rightly carried out cannot be trusted to give a reasonable uniformity and I think that the evidence adduced by any investigator loses in weight if he cannot state that the preparation examined has been made under his own supervision from crude drugs which he personally admits to be the best obtainable, and it is because I hold this opinion that I attach great value to the definite statement in Dr. W. E. Dixon's courteous letter that he found a similar variation in preparations of ergot made by himself and Dr. Hayes. Now, if their experience is confirmed by other pharmacologists of equal standing, and if the same principle of procedure—viz., personal identification throughout—is applied to the other drugs in question with a like result, we shall have before us a clearer indication than we yet possess that with our present incomplete knowledge of the chemistry of such drugs further official tests are desirable; and it is quite possible that bio-chemical standardisation may prove to be the best means of securing that approach to constancy in therapeutical activity which is so important.

I am, Sirs, yours faithfully,

WILLIAM MARTIN, M.D. Durh.

Newcastle-upon-Tyne, Jan. 29th, 1906.

THE DOCTOR IN THE DOCK.

To the Editors of THE LANCET.

SIRS,—Under this title a correspondent recently called attention in your columns to the careless manner in which all sorts of miscreants are received by a badly edited press into the ranks of the medical profession. That colossal black-guard Bridgwater, and more recently a bogus Scotch "baron," were both called medical men in many of the voluminous notices of their exploits. A very good example of this is now occurring in the case of a person alleging himself to be a medical practitioner who was charged with a petty theft from a chemist's shop at Charing Cross. This man was described in newspaper after newspaper as a medical practitioner, but the magistrate very properly refused the application for bail made on his behalf by his solicitor when he heard that the accused was not a registered medical man. I am not prejudging this case. The accused is said to possess an American degree, a claim which, though it is made by every impudent quack, may in this case be perfectly sound; but until the man's medical status is proved it is obviously unfair to the medical profession to allude to him as a medical man. The *Times* says of this person that he "described himself as a medical practitioner," and such is evidently the fair method of reporting.

I suggest that the mental confusion of the average journalist upon what constitutes a medical practitioner is out of date. Not long ago every outburst of rowdiness in a restaurant or a music-hall was always attributed to medical students and I do not suppose that the various clerks and commercial employes, with possibly a leaven of legal and theological students, who are responsible for these little outbursts, have, or have ever had, the least intention to father their offences upon other people. It was a badly edited press which, with a mind reminiscent of Bob Sawyer and Joe Muff, felt constrained to attribute to the medical student all mischief done by any group of young men which included students of every sort. But the laborious life of the present medical student is becoming known and taproom émeutes are no longer attributed to him as a matter of course. The stage still suffers to some extent at the hands of the press, inebriated ladies of the pavement being not infrequently alluded to in the course of police reports as actresses; but here, again, the journalist is becoming better informed and the ordinary female "drunk" is now more often described as "alleging herself to be an actress." As justice is being done to our medical students and to our comediennesses and tragediennesses, is it not time that the press should awake to what gives a man a right to be described as a medical practitioner? A medical practitioner is a registered medical man in practice—not an advertising quack, not a transatlantic adventurer, nor a monger of abortion pills, and not as a rule either a common thief, common rogue, or common rascal.

I am, Sirs, yours faithfully,

T. DELORME.

Jan. 29th, 1906.

THE NATURE OF CANCER FROM THE CLINICAL ASPECT.

To the Editors of THE LANCET.

SIRS,—In his recent Bradshaw lecture Mr. H. T. Butler,¹ putting aside for the moment the problem of the exact mode of formation of a cancer, propounded the question, "How does a cancer act when it has once appeared in the body?" and he answered without hesitation, "It acts as a parasite," and he gives his reasons for his opinion. Whencesoever the cells have come that we see in a malignant growth, however much they may resemble the healthy cells, the cancer itself behaves as a parasite. Histologically no differences, or only very slight variations from the normal, can be seen between the unaffected healthy cells of the parts and the cells of the new growth; they may take the same stains, they may yield the same chemical products, but physiologically—that is, in the mode of action—they are wide as the poles asunder. The normal healthy cell of the part is a unit of the whole and in sickness or in health behaves as such. It is a citizen of a State and it does its part in carrying on the work of the State; its actions are dictated by a sense of the well-being of the whole and its own interests are subordinate to those of the community. As the whole body flourishes it flourishes also; should sickness and starvation overtake the body the normal cell suffers with it, but when returning health again blesses the whole body, the individual normal cell shows by its participation that it, too, is a lawful sharer in the joys and prosperity of the commonwealth. Finally, the term of life of the cell being ended it goes its way, leaving behind it nothing that will prove hurtful to the State. The ways of the malignant cell are far otherwise. Its ways are the ways of a parasite, and of a parasite which cares nothing for the life of its host. Its aim is to grow as rapidly as possible, with the least exertion, to batten on the body that contains it, and to disregard utterly all considerations as to the life of its entertainer, so that it does not even refrain from doing to death the being who has nourished it.

If this be a true description of the habits of a parasite, surely a cancer has a rightful claim to this title. Come its cells whence they may, whether as an invasion from outside or by a transformation or a degeneration of the living tissues of the body, it cannot be denied that a malignant growth is a true parasite. What matters to it the well-being of the body that contains it? The cancer grows apace. What matters to it that its host lights on days of poverty? Its growth does not slacken. The very prosperity of the cancer depends on what it steals from the body, and the failing health of its host seems but to serve to stimulate the demands and the growth of the cancer. Not until the long-suffering body sickens and dies does the guest relax its demands on its entertainer. It has done to death its benefactor and it must suffer death with it. Yet, even when death claims the body the cancer need not die. Experiments have shown that a malignant growth can be transplanted by transmission from one mouse to another until it has passed through the bodies of 30 mice, and yet at the end of this long series of transigrations it has maintained the same vitality and the same characters which it exhibited in the mouse in which it first was seen. That mouse has long since died but the same malignant growth still lives on. It is not, however, merely in its place of origin that a cancer acts like a parasite. Not only does it spread locally with a complete disregard for the tissues in which it lies, not only does it push aside, press upon, and destroy important structures of its host, careless of the harm it does but, like many parasites, it endeavours to disseminate itself throughout the body which contains it. Its cells are scattered broadcast in the lymph and the blood stream, and wherever one of the cells may lodge there arises a new structure of the cancer with cells of the same aspect and nature as in the spot where it was first seen. This new deposit of the cancer proceeds exactly like its progenitor; it grows with at least the same rapidity; it invades the surrounding tissues and structures at the expense of the host. Each new secondary growth of cancer becomes a centre whence further growth of cancer becomes a fact, not only the distant parts of the body but the remotest corners of the body of the patient limits the extension of the cancerous disease which the body may contain.

From its clinical aspect it cannot be denied that carcinoma is a parasitic disease. Mr. Butler could not doubt that the cells of the new growth were the descendants of the cells of the tissue where the growth first showed itself. He mentioned, merely to condemn the suggestion, that the cell of the new growth is the result of the assimilation of an extraneous cell to the cell of the part; the resemblance is too close for the possibility of this to be admitted, for we should have to acknowledge that the intrusive cell should come to resemble exactly the epithelial cell of the part where it chances to lodge, that amongst squamous cells it should be squamous, that amongst columnar cells it should become columnar, and that spheroidal cells should influence it to become spheroidal too. There only remains the possibility that the cells of the cancer are derived from the cells of the part. What change has taken place in them to induce them to adopt the parasitic attitude we cannot say. One suggestion not wanting in support is that the cell has undergone degeneration and in descending from its former high estate it has reverted to an ancestral form with greatly increased power of multiplication, but this reversion, this atavism, has unfitted it for taking part in the life of the body to which it originally belonged. It has entirely lost touch with its former comrades and it has become a stranger, and because a stranger a parasite, whose life henceforth will run on different lines; it will be dependent as of yore upon its host for sustenance but it will acknowledge no allegiance in return. This theory of reversion is pretty but it is unfortunate that it has at present but little basis of fact. The practical application for the surgeon of the recognition of the truth that, whatever its real origin, a carcinoma, once it has appeared, is a parasitic disease, jumps to the eyes. He will, as he has done for years, strive to remove utterly every cell of the new growth, and inasmuch as the outer limits of the growth are ill defined he will cut widely so as to insure that nothing has been left. The importance of an early operation will not need any insistence for him, he is at present fully alive to the value of removal of the primary growth while yet no truant cells have escaped to distant parts. There is, however, one lesson to be learned from a complete recognition of the parasitic nature of a malignant growth, and that is the danger of the infection during the operation of the tissues left behind. Every cell of the new growth can act as a spore of the disease. It will suffice to start a recurrence of the growth should it be left in the wound. If the scalpel in removing the growth should at any time cut through a portion of the tumour it may, and even probably will, become infected with some cancer cells, and if the same scalpel is used without sterilisation for the removal of the growth and cuts through healthy tissues these are likely to become infected with the cancer cells and recurrence in the wound or scar will occur. In this way, doubtless, are to be explained many of the recurrences in situ which occur after the removal of cancerous growths. It is to be noted that this explanation of the return of malignant growths is quite independent of any theory that carcinoma is due to a germ. Formerly it was not rare to see a surgeon incise a tumour of the breast to make certain of its nature and then, with the very same scalpel, he would proceed to excise it. The utmost care should be taken that the scalpel used for incising a new growth is not employed for excising it. By drawing attention to the parasitic nature of carcinoma when viewed from a clinical aspect Mr. Butler has done a distinct service to surgery. What the outcome may be of the investigations into the true etiology of cancer none can say but for the surgeon clinically it will ever be a parasitic disease.

I am, Sirs, yours faithfully,

Jan 26th, 1906.

CHURCHILL.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Bequests to Birmingham Hospitals.

A SUM of £20,000 bequeathed by the late Mrs. White to the Birmingham and Midland Hospital for Women has been the subject of litigation in the Chancery Division of the High Court of Justice. Under the will of the testatrix the sum was given towards the rebuilding and equipment of the hospital, the money to be applied to the satisfaction of, and under the direction of, the executors. The counsel for the next-of-kin contended that the enlargement of the hospital was entirely completed on the death of the testatrix and that

the gift of £20,000 was not necessary for the scheme to be carried out. Further, the executors had exercised no controlling influence and the counsel contended that no part of the bequest could be applied in payment of what had been already done. The counsel for the hospital stated that the sum of £12,885 was required for the purpose of completing the hospital at the date of the will. Mr. Justice Kekewich, in summing up, said that he could not construe the wording of the will to mean that the money was a free gift to be applied in any way the hospital authorities thought fit. Neither could he decide in the absence of the Attorney-General that so far as the specified object failed the gift might be treated as charitable. Further, he could not see that any time limit was fixed. He considered that the executors might liberally construe the words "rebuilding," and "equipment." When the hospital was both fully rebuilt and completely equipped the executors might find the full amount at their disposal was reasonably required for the purposes to which they might properly apply it and, on the other hand, it might be that they had a substantial balance. On their report he should be prepared to give directions but in the meantime the case was adjourned.—Under the will of Mr. William Robert Lane of Richmond Surrey, formerly of Birmingham, the Queen's Hospital, the General Hospital, and the Children's Hospital each receive £1000.

Local Charities.

The annual meeting of subscribers to the Midland Counties Home for Incurables was held under the presidency of the Marquis of Hertford, vice the late Lord Leigh. The committee reported that the ordinary revenue of the home had enabled it to maintain a higher average number of inmates than had ever been reached before and to create an additional free bed. The commencement of the new east wing was referred to with satisfaction; it will accommodate 15 additional patients and will entail an increased expense of £450 a year.—The annual report of the Worcester Ophthalmic Hospital recorded an increase of patients and of annual subscriptions. The expenditure had decreased.—The annual report of the Sands Cox Provident Dispensary showed an increase of members. It appears from the report and from the speeches made at the meeting that members made an average contribution of 3s. a year in return for which they could be attended by their own local medical man and by suitable trained nurses when required. The medical men in attendance received 5s. per member per year so that the dispensary partakes in a measure of the nature of a charity.

Local Drainage and Sewerage Scheme.

The scheme for constructing storm-water filters and for improving the present filters at Saltley, to which I referred in a former letter, has been considered and approved by the drainage board. The storm-water filters constructed on the principle of bacteria beds will be built of medium to be obtained from the gas and destructor works—viz., clinker and ashes. The efficiency of the present filter-beds will be increased by making the depth of the medium five feet and by providing silt tanks for freeing the sewage of suspended matter before distributing it on the beds. The cost will be spread over a series of years and the board hopes that the annual precepts need not be increased.

Falling Birth-rate in Birmingham.

The city medical officer of health in his quarterly report states that the number of births registered during the last three months of 1905 was the lowest on record for that period—viz., 3648 (birth-rate 26.9 per 1000), as compared with 4017 and 4078 in the fourth quarters of the two preceding years. The general birth-rate in Birmingham has been declining for a considerable number of years. The infant mortality rate is low; in only one ward did it exceed 200 per 1000 births, whereas in the fourth quarter of the preceding year it exceeded 200 in eight of the wards. The general mortality rate was also low; 16.3 per 1000; the highest mortality rate in any ward was 22 per 1000. The mortality rate due to the seven principal zymotic diseases was equal to 1.7 per 1000, as compared with 1.4 per 1000 in the preceding fourth quarter.

Care of Mentally Defective Children

The sites and buildings subcommittee of the Birmingham education committee has decided to adapt the old industrial school in Gem-street for the purposes of a special school for mentally defective children. At the last meeting of the Birmingham education committee Mrs.

Hume Pinsent, the chairman of the special schools subcommittee, was asked how parents received the decision that their children were mentally deficient and in the event of a parent not being satisfied whether there was, as it were, any court of appeal? In reply, Mrs. Pinsent stated that to the admission examination the parents were summoned, as well as the teacher of the child, His Majesty's Inspector, the chairman of the education committee, and the medical man who was examining. In 99 cases out of 100 no objection whatever was made by the parents. They frequently had parents bringing children and asking that they should be admitted to the schools. It was further stated that the subcommittee was waiting for the report of the Royal Commission which was now sitting before bringing forward any scheme for permanent boarding schools for these children.

Jan 30th

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Preston, a "Whited Sepulchre."

SUCH is the title given by one of the members of the Preston town council at its meeting on Jan 25th, when he said "it seemed as if they had not cast off the stigma of [being] the whited sepulchre of the north." For the last two months the death-rate has exceeded the birth rate, the town having passed through an epidemic of measles. Severe strictures were passed on the old women and "ignorant young mothers" by Dr. W. J. McDade as to their treatment of the children. Dr. Brown, the chairman of the health committee, attributed the high death-rate to the fact that Preston people "had been having their little fling" since Christmas began and "the disregard of health laws during the Christmas holidays is terrible." He said also that the people neglect "all the ordinary precautions of life, and we are now reaping the result in a mortality that is terrible to look on." The assemblies of children during the Christmas holidays helped to spread measles and "he attributed last week's death-rate of children of 433 per 1000 births to election madness," parents keeping their children up when they ought to have been in bed four or five hours. He thought it a disgrace that they had not "more regard to their children's lives." This shows a discreditable, and it may be said an inhuman, state of things in Preston, which may be said to be known as "proud Preston"; scarcely proud just now, one would think, of the children's death rate of 433 per 1000. The cotton trade, the chief provider of the industry of Lancashire, is said to be in a state of almost unexampled prosperity, of which it is having its share. It is a well-known fact, but not one to the credit of our working population, that in times of high wages the infant mortality is high, while in the hard times of the cotton famine during the American civil war the infant death-rate was very low. In Preston Dr. McDade attributed some part of the child slaughter to the ignorance of the young mothers, yet Preston has had the advantage, if it may be so called, of being taught in our elementary schools, but not, unfortunately, those things which go to form character and fit the young women to enter on family life prepared for their responsibilities. Dr. Brown spoke severely, but he is not one to use strong words without thought, and the mayor hoped that his remarks would have some effect. Perhaps after the excitement of the election is over some needed improvements in the elementary educational curriculum may be looked for.

Small-pox.

Small-pox still continues to be a trouble in this part of the world. Five fresh cases were reported some days ago at Oldham. The Manchester city council has agreed with the Levenshulme urban district authority to allow cases of small-pox from the district to be received at the Manchester corporation hospital. The town of Heywood has become notorious as the place where those who wish to gamble with the dangers to life and health and of disfigurement that small-pox so often leaves as a memento of its visitation are welcomed and sent forth rejoicing in the possession of a vaccination exemption certificate. It was not, therefore, very surprising to hear it called "the Mecca of the anti-vaccinators" by someone who applied the other day for such a certificate at the Bolton borough police court.

Appointment.

Dr. Duncan Forbes, who has been for some time assisting

the gift of £20,000 was not necessary for the scheme to be carried out. Further, the executors had exercised no controlling influence and the counsel contended that no part of the bequest could be applied in payment of what had been already done. The counsel for the hospital stated that the sum of £12,885 was required for the purpose of completing the hospital at the date of the will. Mr. Justice Kekewich, in summing up, said that he could not construe the wording of the will to mean that the money was a free gift to be applied in any way the hospital authorities thought fit. Neither could he decide in the absence of the Attorney-General that so far as the specified object failed, the gift might be treated as charitable. Further, he could not see that any time limit was fixed. He considered that the executors might liberally construe the words "rebuilding" and "equipment." When the hospital was both fully rebuilt and completely equipped the executors might find the full amount at their disposal was reasonably required for the purposes to which they might properly apply it and, on the other hand, it might be that they had a substantial balance. On their report he should be prepared to give directions but in the meantime the case was adjourned.—Under the will of Mr. William Robert Lane of Richmond Surrey, formerly of Birmingham, the Queen's Hospital, the General Hospital, and the Children's Hospital each receive £1000.

Local Charities.

The annual meeting of subscribers to the Midland Counties Home for Incurables was held under the presidency of the Marquis of Hertford, vice the late Lord Leigh. The committee reported that the ordinary revenue of the home had enabled it to maintain a higher average number of inmates than had ever been reached before and to create an additional free bed. The commencement of the new east wing was referred to with satisfaction; it will accommodate 15 additional patients and will entail an increased expense of £450 a year.—The annual report of the Worcester Ophthalmic Hospital recorded an increase of patients and of annual subscriptions. The expenditure had decreased.—The annual report of the Sands Cox Provident Dispensary showed an increase of members. It appears from the report and from the speeches made at the meeting that members made an average contribution of 3s. a year in return for which they could be attended by their own local medical man and by suitable trained nurses when required. The medical men in attendance received 6s. per member per year so that the dispensary partakes in a measure of the nature of a charity.

Local Drainage and Sewerage Scheme.

The scheme for constructing storm-water filters and for improving the present filters at Salfley, to which I referred in a former letter, has been considered and approved by the drainage board. The storm-water filters constructed on the principle of bacteria beds will be built of medium to be obtained from the gas and destructor works—viz., clinker and ashes. The efficiency of the present filter-beds will be increased by making the depth of the medium five feet and by providing silt tanks for freeing the sewage of suspended matter before distributing it on the beds. The cost will be spread over a series of years and the board hopes that the annual precepts need not be increased.

Falling Birth-rate in Birmingham.

The city medical officer of health in his quarterly report states that the number of births registered during the last three months of 1905 was the lowest on record for that period—viz., 3648 (birth-rate 26.9 per 1000), as compared with 4017 and 4078 in the fourth quarters of the two preceding years. The general birth-rate in Birmingham has been declining for a considerable number of years. The infant mortality rate is low; in only one ward did it exceed 200 per 1000 births, whereas in the fourth quarter of the preceding year it exceeded 200 in eight of the wards. The general mortality rate was also low, 16.3 per 1000; the highest mortality rate in any ward was 22 per 1000. The mortality rate due to the seven principal zymotic diseases was equal to 1.7 per 1000, as compared with 1.4 per 1000 in the preceding fourth quarter.

Care of Mentally Defective Children

The sites and buildings subcommittee of the Birmingham education committee has decided to adapt the old industrial school in Gem-street for the purposes of a special school for mentally defective children. At the last meeting of the Birmingham education committee Mrs.

Hume Pinsent, the chairman of the special schools subcommittee, was asked how parents received the decision that their children were mentally deficient and in the event of a parent not being satisfied whether there was, as it were, any court of appeal? In reply, Mrs. Pinsent stated that to the admission examination the parents were summoned, as well as the teacher of the child, His Majesty's inspector, the chairman of the education committee, and the medical man who was examining. In 99 cases out of 100 no objection whatever was made by the parents. They frequently had parents bringing children and asking that they should be admitted to the schools. It was further stated that the subcommittee was waiting for the report of the Royal Commission which was now sitting before bringing forward any scheme for permanent boarding schools for these children.

Jan. 30th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Preston, a "Whited Sepulchre."

SUCH is the title given by one of the members of the Preston town council at its meeting on Jan. 25th, when he said "it seemed as if they had not cast off the stigma of [being] the whited sepulchre of the north." For the last two months the death-rate has exceeded the birth rate, the town having passed through an epidemic of measles. Severe strictures were passed on the old women and "ignorant young mothers" by Dr. W. J. McDade as to their treatment of the children. Dr. Brown, the chairman of the health committee, attributed the high death-rate to the fact that Preston people "had been having their little fling" since Christmas began and "the disregard of health laws during the Christmas holidays is terrible." He said also that the people neglect "all the ordinary precautions of life; and we are now reaping the result in a mortality that is terrible to look on." The assemblies of children during the Christmas holidays helped to spread measles and "he attributed last week's death-rate of children of 433 per 1000 births to election madness," parents keeping their children up when they ought to have been in bed four or five hours. He thought it a disgrace that they had not "more regard to their children's lives." This shows a discreditable, and it may be said an inhuman, state of things in Preston, which may be said to be known as "proud Preston"; scarcely proud just now, one would think, of the children's death-rate of 433 per 1000. The cotton trade, the chief provider of the industry of Lancashire, is said to be in a state of almost unexampled prosperity, of which it is having its share. It is a well-known fact, but not one to the credit of our working population, that in times of high wages the infant mortality is high, while in the hard times of the cotton famine during the American civil war the infant death-rate was very low. In Preston Dr. McDade attributed some part of the child slaughter to the ignorance of the young mothers; yet Preston has had the advantage, if it may be so called, of being taught in our elementary schools, but not, unfortunately, those things which go to form character and fit the young women to enter on family life, prepared for their responsibilities. Dr. Brown spoke severely, but he is not one to use strong words without thought, and the mayor hoped that his remarks would have some effect. Perhaps after the excitement of the election is over some needed improvements in the elementary educational curriculum may be looked for.

Small-pox.

Small-pox still continues to be a trouble in this part of the world. Five fresh cases were reported some days ago at Oldham. The Manchester city council has agreed with the Levenshulme urban district authority to allow cases of small-pox from the district to be received at the Manchester corporation hospital. The town of Heywood has become notorious as the place where those who wish to gamble with the dangers to life and health and of disfigurement that small-pox so often leaves as a memento of its visitation are welcomed and sent forth rejoicing in the possession of a vaccination exemption certificate. It was not, therefore, very surprising to hear it called "the Mecca of the anti-vaccinators" by someone who applied the other day for such a certificate at the Bolton borough police court.

Appointment.

Dr. Duncan Forbes, who has been for some time assisting

the gift of the Crown on the recommendation of the Secretary for Scotland who, under the new Government, is the Right Hon. John Sinclair, M.P., a son-in-law of Lord Aberdeen.

The Morison Lectures in Edinburgh.

These lectures¹ were favoured by a good attendance, many men engaged in lunacy work having evidently come to Edinburgh to hear them. The lecturer was well heard, and his material was well arranged and fully illustrated by means of lantern slides and microscopic preparations.

The Teaching of Gynaecology in the University of Edinburgh.

It is understood that the University of Edinburgh has decided to separate the teaching of gynaecology from the Chair of Obstetrics. Meanwhile communications are taking place between the managers of the Royal Infirmary and the University with regard to the arrangements to be made in the infirmary. It is not proposed to appoint a professor of gynaecology but to make the new post a lectureship. It is understood that by the Ordinances of the Scottish Universities Edinburgh cannot make a new chair without the sanction of the other Scottish Universities, while there seems to be no such difficulty regarding the establishment of a lectureship. The teaching of gynaecology is necessarily a most difficult and delicate question in this country, particularly in general hospitals with many students. The difficulty is necessarily lessened the greater the number of teachers or of local institutions where limited numbers of students can receive practical instruction, but such arrangements would imply an amount of organisation and of decentralisation which does not come within the horizon of University policy.

The Customs of Hairdressers.

Even to the average layman with a weakness for cleanliness in all that relates to his own person, the customs of hairdressers sometimes give rise to a few qualms. In the case of the medical man educated to a firm belief in asepsis and with a clear knowledge of all the dangers lurking in a barber's "shave" or in the rotary brush it is matter for wonder that he ever has courage to set foot in a barber's shop. Glasgow has determined to remedy this state of affairs, not that she is worse in this respect than other cities, but an effort is to be made to bring the arrangements of all hairdressers' shops up to the standard which already exists in the better class shops of that kind. The health committee has had several meetings with representatives from the Hairdressers' Guild, as the result of which a series of regulations relating to cleanliness and prevention of infection has been adopted by the committee. In addition a register is to be kept by the medical officer of health of the names and addresses of all hairdressers in the city who comply with the regulations and recommendations and apply for registration. A certificate of registration will be issued by the corporation to each hairdresser so registered.

Wastage of Child Life.

A lecture on Wastage of Child Life was delivered in Edinburgh on Jan. 23rd under the auspices of the Parents' National Educational Union by Mr. Broadbent, mayor of Huddersfield. Professor C. Hunter Stewart presided over a large audience of ladies and gentlemen. Mr. Broadbent referred to the fact that the death-rate of children under one year of age was a clear index of the health conditions of the children who survived, and it was probable that for every infant life which might be saved at least six lives might be made better and healthier. Every life lost pointed to many lives injured, and he suggested that many of the unfit had been rendered unfit in the first place by the unfair treatment which they had received in their early infancy. The high death-rate was due not so much to a deficiency of vital force in the infants as to the conditions surrounding them, which made 95 out of 100 infants survive in one part of a town and only 60 out of 100 in another part. The causes which led to this waste of life were ignorance and indifference. Overcrowding, deficient milk-supply, and the employment of married women in factories were secondary influences. The mothers were not to blame. The fault was to be found in the indifference of statesmen and educationists. It was the fault of the so-called educated classes. They had had compulsory education in force nearly 35 years and the result was that the mothers of to-day were as a rule totally ignorant of the elementary duties of motherhood. They did not allow the future mothers to stay at home and

learn the elementary duties of motherhood. The girls were compelled to attend school and as soon as they were able they had to go to work. Often everything was done to prevent them having any intimation that motherhood was the highest privilege of their sex. His remedy was to help the mothers in their own homes to feed, tend, and care for their own babies. Mr. Broadbent then explained the system which had been established in Huddersfield. One shilling was given for the prompt notification of any birth and a notice of birth not thus notified was obtained from the registrar. Lady health visitors, appointed by the corporation, paid a visit to the home as soon after a birth as possible, leaving a card of advice and giving whatever good counsel was practicable. After the visit of the lady health visitor the health of the baby was looked after by a voluntary organisation which embraced the whole town in its operations. The work of this organisation consisted of systematic visiting entirely from the health point of view and not for the purpose of giving charity. The attempt was new but it was proving very satisfactory. Dr. T. S. Clouston, Dr. W. Leslie Mackenzie, Dr. Elsie M. Inglis, and others spoke and expressed their interest in the work and dwelt upon the importance of it.

Greenock Infirmary.

In consequence of complaints by ratepayers relating to the fever house of Greenock Infirmary an inquiry has been instituted by the Local Government Board. As regards the alleged difficulty of parents in getting information as to the progress of children who are inmates of the fever house, it has been arranged that all such inquiries are to be made at a certain hour every day instead of on only four days of the week. Another alleged grievance was insufficiency of accommodation in the fever house. Dr. F. Dittmar, however, who is investigating the matter on behalf of the Local Government Board, states that he visited all the wards in which patients, mostly children, were under treatment and found them clean, airy, and well kept. There could be no doubt, on the other hand, that the nurses were very poorly and unsatisfactorily housed and, strictly speaking, some of their rooms were uninhabitable. They were dingy, in some cases damp, and were situated in the basement of the fever house. In several of the rooms inspected by Dr. Dittmar the floors were under the level of the area outside.

The Care of the Insane.

The quarterly meeting of the Aberdeen, Kincardine, and Banff Association of Inspectors of Poor was held on Jan. 27th in the Music Hall Buildings, Aberdeen, at which a paper was read by Dr. Charles Macpherson, Edinburgh, Deputy Commissioner in Lunacy for Scotland, on the subject of "the family care of the insane, more particularly with reference to its present position and possibilities of development in Aberdeen, Kincardine, and Banff." Mr. John W. Gordon, Rathven, President of the society, occupied the chair, and there was a large attendance of members of the association and also of members of the parish councils in the three counties.

Jan. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

THE annual dinner of the Royal College of Surgeons in Ireland has been announced to take place on Saturday, Feb. 17th. His Excellency the Lord Lieutenant has signified his intention of being present.

Coroners' Inquests in Railway Accident Cases.

A deputation from the Parliamentary Committee of the Irish Trades Congress waited on the Chief Secretary at Dublin Castle on Jan. 27th for the purpose of laying before him some grievances which in its opinion required the attention of the Government. Amongst other matters Mr. Walter Hudson, M.P., the recently elected member for Newcastle-on-Tyne, said that at coroners' inquests in railway accident cases technical experts should be allowed to appear on behalf of the next of kin. The Chief Secretary gave a favourable reply to the suggestion, stating that it rested with the discretion of the coroner but that he saw no reason why the latter should refuse.

Ulster Medical Society.

At the third meeting of the present winter session, held in the Belfast Medical Institute, on Jan. 25th, the President

¹ We publish an abstract of the first lecture on p. 324 of our present issue.—Ed. L.

infirmary the whole question of increasing the subscriptions has been intrusted to a committee whose efforts have already met with a considerable measure of success.

Jan. 30th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Opening of the Newport (Mon.) Borough Asylum.

THE joint lunatic asylum at Abergavenny was established in the year 1852 for the treatment of patients from the counties of Monmouth, Hereford, Brecon, Radnor, and the city of Hereford. In 1870 patients from the city and county of Hereford were removed to the asylum at Burghill, in Herefordshire, and in 1903 the Breconshire and Radnorshire patients were removed to the new asylum at Talgarth. The latest, and what will probably be the final, depletion has now been accomplished by the removal of the Newport borough patients to the new asylum which has been erected at Caerleon. Provision was made in 1852 for 210 patients at the Abergavenny institution, but subsequent enlargements in 1861, 1878, 1882, and 1892 increased the accommodation to over 1100 beds. In 1897 the county council of Monmouth, under the provisions of the Lunacy Acts, required the corporation of the borough of Newport to provide its own asylum accommodation and to remove its patients from Abergavenny, and in 1899 the corporation undertook to remove its patients optionally at the end of 1903 and absolutely at the end of 1906. This agreement will be carried out well within the stipulated time, for on Jan. 25th the mayor of Newport formally opened the Caerleon institution. The site is 126 acres in extent and commands extensive views of the surrounding country. There is at present accommodation for 368 patients, equally divided between the two sexes, but the administrative offices are designed for 500 patients. The main buildings include a central administrative block with three two-storey blocks on either side, all being connected by covered corridors. The blocks nearest to the administrative offices are for 60 sick and infirm cases in two wards; the next block is for 35 epileptics on the ground floor, and for 35 quiet chronic cases on the upper floor; while in the furthest blocks there is accommodation on each floor for 27 recent and acute cases. Classification is much facilitated by the adoption of these small wards and by each ward having its sleeping accommodation adapted to the class of patient resident in that ward, both as to the position of the dormitories and of the single rooms. The general planning has been very thoughtfully carried out, especially as regards the kitchens, central dining hall, stores, and laundry. The same care has not, however, been displayed in certain minor details and the number of exposed beams, architraves, and dust ledges generally are more than one would expect to find in a present-day institution intended for the reception of the sick. The buildings are lighted by electricity and heated by hot water on the "cable" system. The water-supply is from the corporation mains, storage tanks being provided to hold a day's supply. The total cost of the institution will approximate £400 per bed, a sum capable of reduction if the additional blocks are erected. The furnishing has been carried out at the low figure of £25 per bed. Dr. W. F. Nelis, who was assistant medical officer for 25 years at the Abergavenny Asylum, was some months ago appointed medical superintendent and he has been actively engaged in preparing the institution for the reception of the patients, many of whom are now being removed from Abergavenny.

Cardiff College.

In an address which Sir Arthur Rücker, F.R.S., recently delivered before the Association of Past Students of the University College of South Wales and Monmouthshire he urged that time and opportunity for research should be given to professors in every university and deprecated the idea of an artificial cleavage into the unity of knowledge by devoting too much attention to pure literature and science on the one hand and to technology on the other. In connexion with the provision of university teaching he expressed the opinion that the site, buildings, and initial equipment of university colleges must come from sources other than the fees of the students and stated that in Cardiff the whole of the capital and three-fourths of the general income were derived from

outside sources and that the students paid only about one-fourth of the cost of their education.

The Medical Officer to the Cardiff Education Committee.

The medical officer of health of Cardiff (Dr. E. Walford) was last year appointed medical officer to the education committee and it has been recently decided to pay him a salary of £1 per annum for each of the 37 schools in the city. In reply to an inquiry the Local Government Board has stated that a medical officer of health is entitled to extra remuneration for acting as medical officer to an education committee.

University of Wales.

At a meeting of the Court of the University of Wales held on Jan. 25th the Senior Deputy-Chancellor (Sir Isambard Owen) said that he hoped in the present year they would get through their supplemental charter and also be allowed to establish a faculty of medicine. The reputation of the University, he said, would depend to a large extent upon the faculty of medicine. It has been decided to ask the President of the General Medical Council and the President of the Royal College of Physicians of London to assist in the drafting of the Bill which will have to be presented to Parliament enabling the University to establish a faculty of medicine.

South Wales Water Board.

The Glamorganshire county council is pressing on the preparations for presenting in the next session of Parliament a Bill for the formation of a water board for South Wales. The Breconshire county council has decided to oppose the measure on the ground that it will interfere with its rights, some of which it is thought have not in the past been sufficiently safeguarded.

West Wales Sanatorium.

It was confidently expected that each of the three county councils of Pembrokeshire, Cardiganshire, and Carmarthenshire would vote a sum of at least £500 out of county funds towards the erection of the West Wales Sanatorium. The Carmarthenshire council had, indeed, already decided to give this sum, so that it was a distinct disappointment to those interested in the institution to learn that the Local Government Board has expressed the opinion that the council cannot legally hand over the money. The Board gave a contrary opinion with regard to district councils, several of which have paid capital sums towards the erection of sanatoriums.

Assault on a Medical Cyclist.

At the Bristol county-court, before his honour Judge Austin, Mr. F. C. Whitmore, M.R.O.S. Eng., brought an action against a cattle dealer for personal injuries sustained. Evidence showed that the defendant, who was intoxicated, was driving a vehicle on the wrong side of the road and knocked Mr. Whitmore off his bicycle, breaking the machine. When he was remonstrated with he struck the plaintiff across the neck with his whip. Mr. Whitmore was injured in the abdomen and unable to follow his professional duties for a week. The defendant was ordered to pay ten guineas and costs.

Winsley Sanatorium.

The Winsley Sanatorium has been open for the reception of patients for 12 months, during which time 143 patients have been admitted, the weekly cost of each being about 25s. Jan. 29th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Chair of Medical Jurisprudence in the University of Edinburgh.

OWING to the resignation of Sir Henry D. Littlejohn of the Professorship of Medical Jurisprudence in the University a vacancy has occurred somewhat unexpectedly. So far only two candidates are in the field, one of whom is Dr. H. Harvey Littlejohn, F.R.C.S. Edin., a son of Sir Henry Littlejohn, and who has been a lecturer on medical jurisprudence in the Extra-mural School of Edinburgh for several years, having previously spent some years in Sheffield as medical officer of health there. The other candidate is Dr. W. G. Aitchison Robertson, F.R.C.P. Edin., who has also lectured for a number of years in the Extra-mural School of Edinburgh on the same subject. The appointment is in

Kiel and Professor von Strümpel of Breslau have declined it as they could obtain no assurance of charges which they thought necessary.—*Würzburg*: Dr. Paul Roetter, *privat-docent* of Ophthalmology, has been promoted to an Extraordinary Professorship.

MEDICAL BARRISTERS.—The following medical men have been "called to the bar" this term: by Lincoln's Inn, Stanley Melville, M.D. Brax, M.R.C.S. Eng., L.R.C.P. Lond., of Kensington; by the Middle Temple, John Edward O'Connor, M.B. R.U.I., of Leicester, Albert Henry Bycott, M.D. Lond., of Birmingham, and Charles Porter, M.D., B.Sc. Edin., M.R.C.P. Edin., of Sheffield.

UNIVERSITY OF CAMBRIDGE.—The following have passed the examination in tropical medicine and hygiene and are entitled to the University diploma: James Booth-Clarkson, John Crichton Stuart McDonald, and Robert Small.—On Jan. 29th 32 additional freshmen were matriculated, bringing the total for the present academical year up to 1048.—The new regulations with regard to the admission of candidates for M.B. and M.D. who are resident abroad were approved by the Senate on Feb. 1st.—The following candidate was at the same congregation admitted by proxy to the degree of Doctor of Medicine: Owen Frank Paget, M.B., Gonville and Caius College.

PRESENTATION TO A MEDICAL PRACTITIONER.—The Hon. William Thomas Prout, C.M.G., M.B. C.M. Edin., principal medical officer in Sierra Leone, has been presented with an address, a pair of silver rose bowls, and a pair of silver flower vases by members of the West Africa Colonial medical staff to mark their appreciation of the honour which the King recently conferred upon Dr. Prout by making him a Companion of the Order of St. Michael and St. George. The address, which was signed by 13 medical men, referred to the good work which Dr. Prout has done in connexion with sanitary matters in the various stations of the Protectorate.

THE GLASGOW AND WEST OF SCOTLAND CO-OPERATION OF NURSES.—The Glasgow and West of Scotland Co-operation of Trained Nurses has just celebrated the thirteenth anniversary of its foundation and the report recently passed at the annual meeting shows that the institution is in a very flourishing condition indeed. The number of nurses on the roll is 181, the number of cases nursed during the past year is 1772, and the total earnings for the year amount to £10 533. It is a great satisfaction to find that affairs are in such a flourishing condition. The advantages of such an institution to the public, to the medical profession, and more especially to the nurses themselves, are very obvious, and the committee is to be congratulated on the steps that it is taking to establish sick and pension funds for the nurses.

LITERARY INTELLIGENCE.—The St. Bride's Press will publish on Feb. 19th a work on "Crematoria in Great Britain and Abroad," by Albert C. Freeman. The author, an architect who has made a close study of this subject, has collected a considerable amount of data and he gives 70 practical illustrations of crematoria, columbaria, and cremating furnaces in use in all parts of the world.—Mr. H. J. Glaisher has just ready Mr. A. de Prenderville's new book entitled "Anesthetic Technique for Operations on the Nose and Throat."—Messrs. J. and A. Churchill have nearly ready for publication a book entitled "Clinical Applied Anatomy, or the Anatomy of Medicine and Surgery," by Dr. C. R. Box, physician for out-patients and lecturer on applied anatomy, St. Thomas's Hospital, and Mr. W. McAdam Eccles, assistant surgeon and lecturer on surgical anatomy, St. Bartholomew's Hospital. This work describes how the facts of anatomy influence the incidence and progress of disease and injury. No attempt is made to discuss the details of anatomy in a systematic manner, but the various lesions are reviewed and the anatomical points bearing upon them are indicated. Many of the plates are original and coloured and serve to illustrate relationships of great importance.—Mr. Henry Forde is about to bring out a book written by Dr. F. J. Stearns, the medical officer of health of Camberwell, on the subject of the dissemination and prevention of small-pox. It deals, among other things, with the spread of the disease from hospitals and the ordinary and extraordinary means of conveying the infection from one person to another and discusses the value of measures designed to prevent its spread both from a medical and a financial point of view.

THE GENERAL ELECTION.—The following members of the medical profession have been returned to Parliament: Mr. R. Ambrose, L.R.C.P., L.R.C.S. Edin., re-elected for West Mayo; Sir William J. Collins, M.D. Lond., F.R.C.S. Eng., late chairman of the London County Council, elected for St. Pancras (West); Mr. G. J. Cooper, M.B.C.S. Eng., L.S.A., elected for the Bermondsey division of Southwark; Sir B. Walter Foster, D.C.L., LL.D., M.D. Erlang., F.R.C.P. Lond., re-elected for the Merton Division of Derbyshire; Mr. F. Rutherford Harris, L.R.C.S. Edin., re-elected for the Dulwich division of Camberwell; Mr. G. H. Pollard, M.D. Edin., elected for the Eccles division of Lancashire; Mr. R. J. Price, M.R.C.S. Eng., re-elected for East Norfolk; Mr. A. R. Raby, M.B., C.M. Edin., elected for the Kilmarnock Burghs; Sir G. S. Robertson, K.C.S.I., M.R.C.S. Eng., L.S.A., I.M.S. (retired), elected for Bradford (Central), and Mr. V. H. Rutherford, M.B. Cantab., &c., elected for the Brentford Division of Middlesex. Amongst those who have lost their seats are Sir Michael Foster, K.C.B., M.B. Lond., and Mr. C. F. Hutchinson, M.D. Edin. The results of the polling for the representation of the Universities of Edinburgh and St. Andrews and the Universities of Glasgow and Aberdeen, for which constituencies Sir John Barry Take, M.D., and Professor W. R. Smith, M.D., are respectively candidates, we shall announce next week.

'APOTHECARIES' HALL OF IRELAND.—The following were the results of examinations held in January: W. Shaw-Stewart passed in chemistry and junior anatomy, completing the first professional examination; J. E. McDonogh in chemistry and physics; M. Moody in senior anatomy, completing the second professional examination; J. Gillespie in all subjects, D. J. Boyle and J. Hartigan in pharmacy, and N. J. Murphy in hygiene, all completing the third professional examination; M. Moody in hygiene; J. Gillespie and J. Hartigan in medicine, surgery, midwifery, and ophthalmology, completing the fourth (final) professional examination; and D. J. Boyle in medicine, surgery and midwifery. The diploma entitling the holder to practise medicine, surgery, midwifery, and pharmacy was granted to J. Gillespie and J. Hartigan.

DONATIONS AND BEQUESTS.—An endowment fund of £10,000, producing nearly £300 a year, has been handed over to the Frank James Memorial Hospital at Cowes, of which Princess Henry of Battenberg is the president, by Messrs. James, who gave the hospital.—Under the will of Mr. James Henry Ceely, F.R.C.S. Eng., £500 are bequeathed to Epsom College.—A donation of £100 has been received by the Paddington Green Children's Hospital from a friend who wishes to be known as "Marnie."—The late Mr. Alexander Laing, who died on Oct. 11th, 1905, at Newcastle-upon-Tyne, besides his very generous gift to the city of the art gallery which bears his name, by his will bequeathed £1000 to the Royal Infirmary; £200 each to the Newcastle Dispensary, the Royal Victoria Asylum for the Blind, the Northern Counties Orphanage, the Northern Counties Institution for the Deaf and Dumb, the Fleming Memorial Hospital for Sick Children, the Hospital for Incurables, the Tyne-mouth Victoria Jubilee Infirmary, North Shields, and the Prudhoe Memorial Convalescent Home, Whitley; also £100 each to the Throat and Ear Hospital, the Eye Infirmary, and the Dental Hospital, all of Newcastle-upon-Tyne.

THE BOHEMIAN TWINS.—In many lay papers there has appeared a notice that the "Bohemian Twins," Misses Rosa and Josepha Blazek, who have been seen in exhibitions in this country, have been separated by an operation at a university in Prague. We have had forwarded to us an interesting letter received from Professor Dr. V. Kukula of Prague correcting the mis-statement. "I have removed," he writes, "from the twins, Misses Rosa and Josepha Blazek, or rather from Miss Rosa, a vesical calculus about the size of a large hen's egg by lithotomy. This operation was performed under great difficulties. Firstly, it was impossible to put the twins in a suitable position to enable me to operate. Secondly, the bladder did not permit of being filled with liquid; it therefore made it more difficult to manipulate with instruments. The operation was performed with the assistance of chloroform and though Rosa had great pain Josepha felt no pain at all. The sisters have only one urethra up to the point where it divides to enter the two thoroughly distinct bladders.

(Dr. W. Calwell) being in the chair, Dr. R. W. Leslie read notes of a case of Pernicious Anæmia treated by Cacodylate of Soda.—Mr. A. B. Mitchell gave an account of a case of Complete Excision of the Scapula and showed a patient in whom enterectomy and gastro jejunostomy were performed at the same sitting; he also showed an Emphysematous Tumour of the Intestine removed from the patient previously exhibited, as well as a cystic kidney successfully removed for hæmaturia and a fibro-cystic tumour of the breast.—Dr. A. Gardner Robb read a note on two unusual cases of Perforation in Typhoid Fever.—Mr. Robert Campbell gave an account of a case in which for chronic Bright's disease he had decapsulated the kidneys (Edebohl's operation).

Belfast Hospital for Sick Children.

At the thirty-third annual meeting of the supporters of this hospital, held on Jan. 25th (the Hon. R. T. O'Neill, M.P., in the chair), it was reported that there were 843 intern cases treated in the wards (427 medical, 401 surgical, and 13 ophthalmic). 365 operations were performed. In the extern department 5196 cases were treated, and of these 2802 were medical, 1562 surgical, 608 dental, and 224 eye and ear cases. In this department 341 operations were performed. Financially, the total income was £1670, as compared with £1447 in the previous year. The cash balance, £368, was less than last year, when it was £800. The total expenditure was £2149, as compared with £2210 last year, and the amount of invested funds was £9817. In the remarks of the various speakers reference was made to the high death-rate among infants in Belfast (146 per 1000) which arose from preventable causes, such as carelessness, insufficient nourishment, and generally from improper feeding. Attention was called to the efforts made by the hospital authorities to prevent this mortality by distributing pamphlets giving directions to mothers relating to the care and feeding of infants. Some of the speakers also suggested that the Hospital Saturday and Sunday collections should be for all the hospitals of the city and they thought that in this way more money would be raised.

Belfast Union Infirmary.

Mr. Joseph Fulton, L.R.C.P. & S. Edin., has been appointed by the Belfast board of guardians visiting surgeon to the Belfast union infirmary in the place of the late Dr James Lyness.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The X Rays and Medical Practice.

Two recent sessions of the Academy of Medicine—namely, those held on Jan. 9th and 16th—have been devoted to the consideration of this important subject. M. Chaffard, who opened the discussion with a paper which was listened to with rapt attention by the Academy, read in the course of it a report drawn up by him on behalf of a commission which had been appointed to consider the legal conditions of the employment of the x rays for medical purposes. Eight months previously M. Debove drew attention to the many and various dangers to which the use of the x rays on man gave rise in the hands of those who were not legally authorised to practise medicine. At the same date a congress sitting in Berlin had come to the unanimous conclusion that the use of the x rays on man was strictly the province of the medical profession. M. Chaffard pointed out that these rays since their discovery some ten years ago had been made the subject of numerous investigations which had shown that their action was attended by unexpected and powerful results which it was not possible to consider as matters simply of scientific curiosity and that they could not be used by the first comer without any risk. As a matter of fact, the use of these rays had brought about severe and incurable burns of the skin and glandular atrophy of a startling character in persons who were in the habit of working with them. Finally, in many patients treated by these rays for cancer of the tongue the growth had become rapidly disseminated. M. Chaffard maintained that it was a logical deduction to state that only a qualified medical man should use these rays and even ordinary cases of diagnosis by the rays, such as that of a fracture, needed a medical man rightly to interpret the results arrived at. At present any person can use the rays and it is quite time that

the authorities should intervene in the interests of the public. Even in cases of simple radiography some surveillance should be exercised, for radiographs could be easily "faked" and give rise to all sorts of errors. M. Chaffard concluded by asking the Academy to declare that the medical application of the x rays by persons who were not doctors of medicine, *officiers de santé*, or duly qualified dentists, should constitute an act of illegal practice. M. Reynier declared that it was not possible to assign all the evil results which had followed the use of the x rays to the want of a diploma in those who used them. Many physicians had to deplore unfortunate results from their employment. For the right use of the x rays it was not enough that a man should be a medical practitioner, he must also have some technical knowledge. A physicist in his opinion could handle the rays better than a medical man. M. Chaffard replied that physicists had had just as bad accidents with the rays as medical men, but they did not use them for medical purposes. M. Cornil discussed the pathological conditions in which the x rays had proved useful or the reverse. In cancer of the mucous orifices or of the tongue they were harmful. M. Reynier said that accidents could be avoided by means of a sound technique and that all medical men should be instructed in such so as to avoid the dangers mentioned. Till then let all x ray treatment be ordered by a medical man but not necessarily applied by a medical man. M. Gariel remarked that it was easier for a medical man to learn physics than for a physicist to learn medicine. M. Brouardel said that great danger arose from the unrestricted use of the x rays. M. Debove said that the persons who treated people with the x rays, other than medical men, were a most motley crowd and the abuse should no longer be tolerated. Treatment by the x rays should be solely in the hands of medical men. Moreover, as a matter of fact, the technique is taught in the course of medical physics at the faculty. M. Labbé and M. le Denla both protested against the argument founded upon the fact of accidents occurring in the hands of medical men using the rays. The most skilled anaesthetists occasionally had disasters with chloroform. Finally, the Academy unanimously adopted M. Chaffard's conclusions and in future medical men alone will have the right to use the x rays for treatment.

Jan. 30th.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE—*Berlin:*

Dr. René du Bois-Reymond of the Physiological Institute has been granted the title of Professor and Dr. Otto Schjerning, Surgeon-General in the German Army, has been appointed an Honorary Professor in the Medical Faculty of the University.—*Breslau:* Dr. Hermann Triesep of Graefswald has been offered the appointment of Senior Professor in the Anatomical Institute in succession to the late Dr. A. Schaper.—*Erlangen:* Dr. Wolfgang Weichardt has been recognised as *privat-docent* of Experimental Therapeutics.—*Göttingen:* Dr. Jesionek of Munich has been appointed Extraordinary Professor of Dermatology.—*Jena:* Dr. Jean Noll, *privat-docent* of Physiology, Dr. Julius Grober, Assistant in the Medical Clinic, and Dr. Hans Berger, Resident Physician to the University Lunatic Asylum, have been promoted to Extraordinary Professorships.—*Königsberg:* Dr. Richard Ronge, Senior Surgeon in the University Clinic, has been granted the rank of Professor.—*Lemberg:* Dr. Josef Wiczkowski, *privat-docent* of Medicine, has been promoted to an Extraordinary Professorship.—*Leyden:* Dr. J. Brönlings has been recognised as *privat-docent* of Clinical Diagnosis.—*Louvain:* Dr. Schokaert has been appointed Professor of Midwifery.—*Munich:* Dr. Neumayer has been appointed Extraordinary Professor of Laryngology.—*Naples:* Dr. Pasquale Mazzeo has been recognised as *privat-docent* of Children's Diseases. Dr. Vincenzo D'Amato has been recognised as *privat-docent* of Dermatology.—*Paris:* Dr. Romolo Costa has been recognised as *privat-docent* of Midwifery and Gynecology.—*Prague (Bohemian University):* Dr. O. Völker has been recognised as *privat-docent* of Anatomy.—*Tübingen:* Dr. Kurt Wolf of Dresden has been appointed Professor of Hygiene.—*Vienna:* Dr. J. Donath has been recognised as *privat-docent* of Medicine. There has been some difficulty in filling the late Professor Nothnagel's chair of Medicine. Both Professor Quincke of

- Bristol Royal Infirmary.**—Obstetric Officer, Junior House Surgeon, and Casualty Officer. Salary of former £75 per annum and of two latter £50 each per annum, with board, lodging, and laundry in each case. Also *Honorary Physician and Honorary Surgeon*.
- Cancer Hospital,** Fulham road, London, S.W.—Senior House Surgeon for six months. Salary £20 per annum, with board and residence.
- Canterbury, Kent and Canterbury Hospital.**—House Physician, also House Surgeon, both unmarried. Salary in each case £50 a year, with board and lodging.
- Central Midwifery Board.**—Examiners.
- Cheltenham General Hospital.**—Surgeon-in Charge of Branch Dispensary, unmarried. Salary £50 per annum, with board and lodging. Also Junior House Surgeon, unmarried. Salary £20 per annum, with board and lodging.
- City of London Hospital for Diseases of the Chest,** Victoria Park, E.—Two Physicians to Out patients.
- Dublin, Richmond District Asylum.**—Two Clinical Assistants. Salary £50 per annum, with apartments and rations.
- Dorset County Council.**—Inspector of Midwives and Health Visitor (female). Salary £120 per annum, rising to £150, with travelling expenses.
- Guildford, Royal Surrey County Hospital.**—Assistant House Surgeon. Salary £50, with board, residence, and laundry.
- Hospital for Sick Children,** Great Ormond street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence. Also House Physician, unmarried, for six months. Salary £20, with board and residence. Also Assistant Surgeon.
- Larbert, Stirling District Asylum.**—Assistant Medical Officer. Salary £150, with board.
- Leeds General Infirmary.**—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. Also Clinical Pathologist. Salary £20 per annum.
- Leicester Infirmary.**—Assistant House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
- Midwifery Council.**—Medical Officer to Employes in the Boroughs of Hammermith and Fulham.
- Nottingham County Hospital.**—Senior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
- Nottingham, Asbestos Hospital.**—Resident House Surgeon. Also Resident House Physician. Salary of former £100 and of latter £20 per annum, with board, residence, &c., in each case.
- Nottingham Hospital for Consumption and Diseases of the Throat and Chest.**—Honorary Surgeon.
- Argate, Royal Sea Bathing Hospital.**—Resident Surgeon. Salary at rate of £50 and £120 per annum, with board and residence.
- St. Metropolitan Hospital,** Kingsland-road, N.E.—Assistant Physician.
- St. Mary and St. George's.**—Medical Officer of Health. Salary £50 per annum.
- Newcastle-on-Tyne Dispensary.**—Two Visiting Medical Assistants. Salary £100, rising to £120 per annum.
- St. Peter, Radcliffe Infirmary.**—House Physician and Junior House Surgeon (both unmarried) for six months. Salaries at rate of £20 and £40 per annum, with board, &c.
- Total Free Hospital,** Gray's Inn road, W.C.—Anaesthetist and Curator of Museum (female).
- Wolverhampton and Staffordshire General Hospital.**—Assistant House Surgeon for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

Mr. Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Ashton-under-Lyne, in the county of Lancaster; at Belfast, in the counties of Antrim and Down; at Dunkinfield, in the county of Chester; at Tatum, in the county of Galway; at Fording, in the county of Mayo; and at Oxford, in the county of Oxford.

Births, Marriages, and Deaths.

BIRTHS.

- FRASER.**—On Jan. 22th, at Ingleisle, Lower Edmonton, N., the wife of Simon Fraser, M.B., of a daughter.
- HERBERT.**—On Jan. 22th, at Carrington House, Pendlebury, Manchester, the wife of J. W. Chambers Herbert, Surgeon, of a daughter.
- WAGSTAFF.**—On Jan. 25th, at Saffron Walden, Essex, the wife of Frank A. Wagstaff, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

- FOTHERGILL.**—Smart Atkinson Fothergill, M.R.C.S., L.R.C.P. Edin., 65 years, Sunderland, co. Durham, died on 23rd January, 1906, aged 65 years.
- REBEARD.**—On Jan. 22th, at Grindelwald, Switzerland, of pneumonia, Henry William Rebeard, Lieutenant-Colonel, R.A.M.C., in his 50th year.
- LEIGHARD.**—On Jan. 21st, at Kirkby Lonsdale, William Edward Leighard, L.R.C.P. Edin., M.R.C.S. Eng., aged 59 years.
- PAINE.**—On Saturday, Jan. 6th, at Bournemouth, George Reuben Paine, M.R.C.S., L.R.C.P., late of Lymington, Devon. Laid to rest in Fordingbridge Cemetery.
- WELLS.**—On the 22th of Jan., at his residence, Russell Lodge, 15, Heathfield road, S. Croydon, George Wells, M.R.C.S. Eng., L.S.A., late of Wandsworth, aged 65.

N.B.—A fee of 6s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE AMERICAN QUACK.

A CORRESPONDENT who writes from Newcastle-on-Tyne and who is not a medical man but a layman reads us cuttings from the *Evening Chronicle*, a Newcastle paper, of Jan. 22nd, from the *Newcastle Daily Chronicle* of Jan. 16th, and also a publication called "The American X Ray Messenger," which is undated, but is stated to be published by the English branch of the American Institute, Fernwood-road, Newcastle-on-Tyne. This latter publication is simply and solely devoted to trumpeting the talents of an American called C. J. Macaura who is stated to be a graduate of the National Medical University of Chicago. This institution which, according to the *Newcastle Daily Chronicle*, is the "leading medical school in Chicago" (we wonder what the Rush Medical College will say to this), is a homeopathic establishment and was, according to the Standard Medical Directory of North America for 1903-04, organised in 1891, but in the list of American physicians published in the same directory we are unable to find Dr. Macaura's name. It is quite obvious from the "American X Ray Messenger" that he is a man of the regular type of American quack. There are testimonials purporting to come from various Nonconformist ministers, lady journalists, and a dentist called "J. James, M.D., D.D.S., F.R.S.L.," who, however, appears in the Dentists' Register as being qualified to practise because he was in practice before 1878, and there is also a testimonial from "a well known Bradford physician," signed "J. Bradley, L.R.C.P., L.F.P.S.G., 2, Band-street, Bradford." If Mr. Bradley really did give this testimonial it appears to us that the General Medical Council should take some notice thereof. Newcastle-on-Tyne has just returned two Labour Members to Parliament and it is astonishing that such a hard-headed community should, if we may trust what appear to be editorial paragraphs in the Newcastle papers which we have mentioned, be so easily duped.

THE SALARIES OF POOR-LAW MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—Now that the Poor-law Commission is sitting I wonder if the salaries and fees paid to Poor-law medical officers will come under review. The present scale must, I think, be admitted as most inadequate for the services rendered by the members of a learned profession. Is the paucity of medical men in Parliament partly responsible for this? and is the far larger number of members of the legal profession in the House of Commons the reason of legal appointments being as a rule so much better paid? It would be interesting to compare the duties, responsibilities, and emoluments of, say, a revising barrister and of a parish medical officer. Perhaps someone acquainted with the work of both appointments would do this for us? If we complain of our poor reward we are soon told that there are plenty of other men who would be glad of the post. But this, I maintain, does not meet the case at all and is a quite unworthy argument. If the position of a revising barrister was advertised for competition at half the salary now paid the number of candidates would, I am convinced, excite some comment. I am, Sirs, yours faithfully,
Jan. 30th, 1906. M.O.

CONCERNING TUCKER: A WARNING.

THE man Tucker, whose real name appears to be John Dale Tucker, concerning whom we published a paragraph in THE LANCET of Jan. 27th, was on Jan. 25th charged on a warrant issued by the Director of Public Prosecutions at the Southam Petty Sessions, the charge being one of feloniously giving a false certificate relating to the death of Mary Lyne. The prisoner was remanded until Jan. 31st, bail being refused.

WANTED—A HOME.

THE daughter of a medical man in straitened circumstances has been recommended a short course of the "Wells-Mitchell" treatment. Her relatives can pay one guinea a week for six or eight weeks and her father would be very glad to learn of any institution where the assistance required could be obtained. We will forward any communications that we may receive.

THE REGISTRATION OF BIRTHS.

THE Kensington borough council is circulating the municipal bodies throughout England and Wales asking cooperation in approaching the Local Government Board with the object of urging that department to promote legislation for reducing the time allowed for the registration of births from 32 days to 21 days, as in Scotland. Under the present system particulars of the registration of children who die within the first month of life only reach the medical officer of health at about the same time as the registration of the child's death, and the motive of the Kensington borough council in taking the action above referred to is that if the period for registration were reduced the notification of the birth would be received in time to allow of such advice being given to the mother as might in some cases result in the saving of the infant's life.

I agree thoroughly with my English colleagues that an operation to separate the twins is impossible because of the nature of the connecting growth. In the case of one of them dying a separation would at once be necessary, but the success would be very doubtful. I very much regret that although the newspapers of Prague gave a correct report of what had been done nearly all foreign papers state that I have been successful in separating the two bodies. I take this opportunity to ask you to have the matter put in a right light in the English papers."

UNIVERSITY OF OXFORD.—The Vice-Chancellor has appointed the Right Hon Lord Curzon of Kedleston, M.A., Hon. D.C.L., All Souls' College, to be Romanes Lecturer for 1906—Scholarships in Natural Science are announced for competition as follows: On March 13th, Keble College; and on April 24th, Merton College, New College, and Corpus Christi College.—An examination for a Fellowship of the annual value of £200, tenable for three years, will be held in the present term. The examination will commence on Tuesday, Feb 27th. Intending candidates should send their names, addresses, and qualifications to the Regius Professor of Medicine, University Museum, on or before Saturday, Feb 10th. Further particulars will be found in the *University Gazette* of Jan 23rd (Clarendon Press).

DEATH OF A CENTENARIAN.—The death is announced, at Corfe, near Taunton, on Jan. 25th, of Mrs. B. Warren, at the age of 106 years.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta street, Covent Garden, W.C.

Sound and Rhythm. By W. Edmunds. Price 2s 6d. net. Models of Human Ear to accompany book. Price 21s net.

GLAISHER, HENRY J., 57, Wigmore street, Cavendish square, W.

Oliver Wendell Holmes and the Contagiousness of Puerperal Fever. An Address delivered at Marlborough, Wiltshire, to the Town Bridge Division of the Bath and Bristol Branch of the British Medical Association, Oct. 28th, 1905. By Charles J. Oullingworth, M.D., F.R.O.P., D.O.L. (Hon.) Durham, LL.D. (Hon.) Aberdeen, Consulting Obstetric Physician to St. Thomas's Hospital, London. With Portrait. Price 2s 6d. net.

LEWIS, H. K., 136, Gower street, W.C.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Seventh edition, enlarged and thoroughly revised. Price 12s 6d. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

The Dissociation of a Personality: a Biographical Study in Abnormal Psychology. By Morton Prince, M.D., Professor of Diseases of the Nervous System, Tufts College Medical School, Physician for Diseases of the Nervous System, Boston City Hospital. Price 10s 6d. net.

MACMILLAN AND CO., LIMITED, London.

A Text-Book of the Diseases of the Ear, Nose, and Pharynx. By D. P. St. John Roosa, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School and Hospital, and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat, in the New York Post-Graduate Medical School and Hospital. Price 12s 6d. net.

OWEN, A., AND CO., 23, Regent-street, S.W. (late of 286, High Holborn).

Last Words on Evolution. A Popular Retrospect and Summary. By Ernst Haeckel, Professor at Jena University. Translated from the Second Edition by Joseph McCabe. With Portrait and Three Plates. Price 6s.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Post-operative Treatment. By Nathan Clark Morse, A.B., M.D., Surgeon in Chief to "Emergency Hospital," Eldora, Iowa, District Surgeon, Chicago and Northwestern and Iowa Central Railways, Ex-President, Iowa State Association of B.R. Surgeons. Price 17s 6d. net.

SAUNDERS, W. B., AND COMPANY, 9, Henrietta-street, Covent Garden, W.C.

A Manual of the Diseases of Infants and Children. By John Rührsch, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Price 10s net.

A Text-book of Physiology for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Price 18s net.

Gall stones and their Surgical Treatment. By B. G. A. Moynihan, M.S. Lond., F.R.C.S. Leeds. Second edition, revised and enlarged. Price 21s net.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College and Woman's Medical College, Philadelphia. Fourth edition, thoroughly revised. Price 25s. net.

A Treatise on Diagnostic Methods of Examination. By Paul Dr. Hermann Sahli, Director of the Medical Clinic University of Bern. Edited, with Additions, by Francis P. Kanehelt M.D., Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York, and Nathl. Bornitz Potter, M.D., Visiting Physician to the City Hospital and to the French Hospital, New York. Authorized Translation from the Fourth Revised and Enlarged German Edition. Price 27s 6d. net.

SCIENTIFIC PRESS, LIMITED, 27 and 29, Southampton-street, Strand, W.C.

Lectures upon the Nursing of Infectious Diseases. By F. J. Woollacott, M.A., M.D., B.Ch. Oxon., D.P.H., Senior Assistant Medical Officer, Park Hospital, Metropolitan Asylums Board. Price 2s 6d. net.

SMITH, ELDER, AND CO., 15, Waterloo-place, S.W.

On the Nature, Causes, Variety, and Treatment of Botry Deformities in a Series of Lectures delivered at the City Orthopaedic Hospital in the Year 1852 and subsequently by the late E. J. Chance, F.R.O.S. Eng., Surgeon to the City Orthopaedic Hospital. Edited by John Poland F.R.O.S. Eng., Surgeon to the City Orthopaedic Hospital. Second edition. In two volumes. Vol. I. Price 6s net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column are invited to forward to THE LANCET Office, directed to the Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BACKHOUSE, JOHN BURDER, M.B., Ch. M. Melb., has been appointed Public Vaccinator for the South Western District, Victoria, Australia.

BILL, GEORGE, M.B., Ch. M. Edin., has been appointed Public Vaccinator for the North Eastern District, Victoria, Australia.

BROWN, W. LANGDOY, M.D. Cantab., M.R.C.P., has been appointed Physician to the Metropolitan Hospital.

DICKMAN, H. G., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Holbeck District of the county of Lincoln.

FAIRFAX, N. P., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Innerleithen District of the county of Peebles.

GRAHAM, J., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cockermouth District of the county of Cumberland.

GRANT, J. DUNN, M.D. Edin., F.R.O.S. Eng., has been appointed Honorary Aural Surgeon to the Royal Caledonian Asylum, Buxley Herts.

HALL, J. WALKER, M.D., Ch. B. Vict., has been appointed to the newly formed post of Pathologist, Bacteriologist, and Director of Clinical Laboratories at the Bristol Royal Infirmary.

HAYES, HORACE FREDERICK, M.B., Ch. B. Melb., has been appointed Public Vaccinator for the South Eastern District, Victoria, Australia.

IVENS, FRANCES, M.B., M.S. Lond., has been appointed Surgical Registrar to the Royal Free Hospital, Gray's Inn road.

LEMIX, OSCAR E., L.S.A. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MACFARLANE, W. D., M.B., M.S. Glasg., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MERRILEES JAMES FREDERICK, M.B., Ch. B. Melb., has been appointed Medical Officer of Health for the Shire of Kerang (Kerang District), Victoria, Australia, and Public Vaccinator for the North Western District.

REID, J. M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Doune District of the county of Perth.

ROCKETT, R. N. F., M.B. Melb., has been appointed Acting District Medical Officer and Acting Public Vaccinator pro tem. for Northam, West Australia.

SAUNDERS, J. H., M.B., Ch. B. Melb., has been appointed Acting District Medical Officer and Public Vaccinator for Broome and Quarantine Officer for the Port of Broome, West Australia.

SINCLAIR, THOMAS WALKER, M.B., Ch. B. Melb., has been appointed Assistant Medical Officer of Health for the Metropolitan Combined Districts, Department of Public Health, New South Wales, Australia.

TURNER, A. S., M.R.C.S. L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Beckenham District of the county of Kent.

WAUGH, ALEXANDER, L.R.C.P. Lond., M.R.O.S., has been appointed Deputy Medical Officer for the Midsummer Norton District of the Clutton Union.

WORGER, RICHARD GEORGE, L.R.C.P. Lond., M.R.C.S. L.S.A., has been appointed Deputy Medical Officer for the Radstock District of the Clutton Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD POOR LAW HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

complicated by Pregnancy.—Dr. H. Macnaughton-Jones: A Note on Crysta of the Vagina. Paper.—Dr. Jelliff: Notes on Two Rare Conditions met with in the Pelvis during Operation. The President; Inaugural Address.

CHILDREN OF SOCIETY AND THE PAEDIATRIC CHILD STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Lecture.—Mr. J. C. Hudson: American Schools and their Relation to the Child and to Society. (Arranged by the British Child Study Association.)

FRIDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Charles-street, W.C.).—4 P.M. Dr. J. M. H. MacLeod: Clinicque. (Surgical.) 5.15 P.M. Lecture.—Dr. L. Williams: The Therapeutics of Some Common Affections. POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Hood: Mitral Stenosis. (Lecture I.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Charles-street, W.C.).—4 P.M. Dr. J. M. H. MacLeod: Clinicque. (Surgical.) 5.15 P.M. Lecture.—Dr. L. Williams: The Therapeutics of Some Common Affections.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Hood: Mitral Stenosis. (Lecture I.)

TUESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Charles-street, W.C.).—4 P.M. Dr. T. Williams: Clinicque. (Medical.) 5.15 P.M. Lecture.—Dr. D. Grant: The Dangerous Sequelæ of Suppuration in the Middle Ear—Diagnosis.

POST-GRADUATE COLLEGE (London County Asylum, Clapham, Woodford Bridge, Essex).—5 P.M. Dr. R. Jones: Types of Mental Diseases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture.—Dr. J. Taylor: Epilepsy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on Delusional Insanity.

WEDNESDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Charles-street, W.C.).—4 P.M. Mr. J. Clarke: Clinicque. (Surgical.) 5.15 P.M. Lecture.—Dr. J. Cantlie: The Tropical Affections commonly met with in Britain.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. L. Williams: Dental Diseases in Relation to General Diseases.

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture.—St. Victor Horsley: Surgery of the Spinal Cord.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration: Dr. W. Wingrave: Special Pathology.

THURSDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Charles-street, W.C.).—4 P.M. Mr. Hutchinson: Clinicque. (Surgical.) 5.15 P.M. Lecture.—Dr. F. J. McCann: Abortion and Premature Labour.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Keetley: Plastic Surgery.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Course.)

SARAFAN FREE HOSPITAL FOR WOMEN (Marylebone road, N.W.).—3 P.M. Lecture.—Dr. McCann: Cancer of the Uterus.

St. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—5 P.M. Dr. M. Dockrell: Scabies; Eruptions—Erythematous (I. Maculæ, II. Maculo-papular; Papule (I. Miliary; II. Lenticular; III. Squamous; IV. Moles). (Cherterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture.—Dr. G. Johnston: Spontaneous Asthma and its Treatment. (Post-Graduate Course.)

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METEOROLOGICAL READINGS.

(Taken daily at 5.55 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 1st, 1906.

Date.	Barometer reduced to Sea Level and 30° F.	Direction of Wind.	Ratio Fall.	Solar Radiation in Fahren.	Maximum in Temp. Scale.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 28	29.51	W.	0.09	67	64	43	46	47	Overcast.
" 29	29.32	W.	—	75	63	47	46	48	Cloudy.
" 30	29.28	S.W.	—	61	59	47	46	48	Cloudy.
" 31	29.10	W.	—	77	63	46	46	48	Overcast.
" 31	29.35	S.W.	0.02	66	60	46	46	48	Over at 11.
Feb. 1	29.31	W.	—	51	49	46	46	48	Foggy.
	29.32	S.W.	—	49	46	46	46	48	Overcast.

AN ORIENTAL REMEDY FOR DOG BITES.

A CORRESPONDENT in the Indian Medical Service forwards to us the following prescription and letter of warning which were given to him by a Babu:—

Medicine for dog bite, known to me, by which I have cured many.

1. Rubbing *Kuchla* (fruit *Strychnia*) with a very small quantity of water (say five or six drops) and applying that paste to the wounded part daily once.

2. Taking only two hairs from another dog—i.e., not the dog that has bitten—putting them in a piece of plantain, and swallowing up that piece with two hairs within. On any Sunday.

At Oral, one dog suffering from hydrophobia bates six or seven; all died except the man who made use of the medicine—from me.

1.10.05.

N. K.

SIR,—I forgot to note down with reference to *Kuchla* (fruit *Strychnia*) that it is poisonous—especially for the dogs. It should be carefully rubbed; and the thing on which it is rubbed should be instantly washed, so that no dog may take the smell, or lick over the rubbed part. In short, *Kuchla* is poisonous, poisonous. Kindly note.

I am, Sir, your M.O. servt.,

N. K.

Kuchla is the *strychnos nux vomica*, of which the fruit has been said to be non-poisonous, but according to "The National Standard Dispensatory, 1905" (Churchill), the pulp contains strychnine. It is interesting to note in the second part of the prescription that the hair is not to be "a hair of the dog that bit you," but that of another dog, contrary to the usual proverb.

THE USE OF PARAFFIN IN NASAL DEFORMITIES.

To the Editors of THE LANCET.

SIRS,—Could any of your readers tell me whether time has shown that the advantage of this method of treatment is likely to be permanent? In suitable cases is there any risk of such subsequent ocular and intraorbital lesions as are reported in THE LANCET of Oct. 7th last to have come under the observation of M. Rohmer of Nancy? After the injection of paraffin is the colour of the skin of the nose uniform?

I am, Sirs, yours faithfully,

A. B. O

Jan. 30th, 1906.

SUPERCILIARY GYMNASTICS.

To the Editors of THE LANCET.

SIRS,—In reference to the paragraph headed "Superciliary Gymnastics," I may say that I have been able to do the same thing since I was 12 years old and I am now 37. I can also move any ear and keep the other still, or both at one time; also move the nostrils.

I am, Sirs, yours faithfully,

Dundee, Jan. 30th, 1906.

JAMES S. DOIG.

To the Editors of THE LANCET

SIRS,—On the subject of gymnastic eyebrows, I should like to inform you that I am able to raise one and lower the other eyebrow simultaneously and alternately as mentioned in the paragraph named and should be pleased to give any further information you may require.

I am, Sirs, yours faithfully,

Jan. 26th, 1906.

ERNEST J. BELL.

THE DENTAL SALIVA EJECTOR IN GENERAL SURGERY.

To the Editors of THE LANCET.

SIRS,—I was interested to read in THE LANCET of Jan. 20th, p. 162, that Dr. R. H. Woods of Dublin had used the dental saliva ejector in laryngeal operations. During the past year I have used it in intra-oral operations on several occasions and can corroborate Dr. Woods's favourable report as to its utility. I hope to see it before long used more generally by surgeons.—I am, Sirs, yours faithfully,

A. L. FLEMING,

Jan. 30th, 1906.

Anæsthetist, Bristol Royal Infirmary.

E. K.—We are obliged for our correspondent's kindly worded criticism, although the particular illustration referred to does not appear to be of a belt intended for the purpose suggested; still we are alive to the possibilities of mistake in this direction and will keep the subject in mind.

ERRATUM.—In the review of a book entitled "Cattle Tuberculosis" which appeared on p. 235 of THE LANCET of Jan. 27th the price was given as 2s. The price should have been 3s.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—St. Louis Medical Review, Notts Guardian, Dublin Express, Daily Chronicle, Dublin Times, Birmingham Post, Surrey Advertiser, Freeman's Journal, The Scotsman, Evening News, Liverpool Mercury and Journal, Daily News, Star, Westminster Gazette, American Medicine, Sheffield Independent, Northampton Daily Reporter, Bristol News, Newcastle Mail, Darlington Times, &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Eye (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Dental London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Soho-square (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Northern Central (2.30 P.M.), West London (2.30 P.M.), Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Dental, 2 P.M.).

SATURDAY (10th).—Royal Free (9 A.M.), London (2 P.M.), St. Mark's (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (5th).—MEDICAL SOCIETY OF LONDON (11, Chandos-st., Cavendish-square, W.).—9 P.M. Lettsomian Lecture.—Mr. C. Ballance: Some Points in the Surgery of the Brain and its Membranes. Lecture I.: Reminiscences of Dr. Lettsom and Some Remarks in the Surgery of Meningitis.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-st., Cavendish-square, W.).—4.30 P.M. Cases, &c., will be shown by Mr. Macleod Yeasley, Mr. A. A. Gray, Mr. L. Lawrence, Mr. Milligan, Mr. Whitehead, and Mr. D. Grant.

TUESDAY (6th).—PATHOLOGICAL SOCIETY OF LONDON (Lister Institute, Chelsea gardens).—5 P.M. Laboratory Meeting. Dr. Macleod: The Bacteriolytic and Agglutinative Properties of the Serum of Goats inoculated with Typhoid Cell-juice.—Dr. Bainbridge and Mr. Leathers: The Fatty Change in the Liver produced by Ligature of the Hepatic Artery.—Mr. Dudgeon and Dr. Leathers: The Fatty Change in the Heart caused by Diphtheria Toxin.—Dr. Macleod: Immunisation between Bacillus Pestis and Bacillus Pseudotuberculosis Rodentium.—Dr. Ledingham: Natural Occurrence of the Disease in the Guinea pig.—Mr. Moon: Sarcocystis Nidis.—Demonstrations will be given by Dr. O. J. Martin, Dr. Harden, Dr. Barr, Dr. Marshall and Dr. Green.

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—4.30 P.M. Paper: Mr. O. C. Beale: Imperial Immigration.

WEDNESDAY (7th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Paper:—Mr. L. Gaster: Progress in Electric Lighting. ONTOGENETICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Horrocks, Mr. Targett, and Mr. Handfield-Jones. Short Communication: Dr. H. R. Spencer: Second Case of Ovariotomy during Labour. The President (Dr. Dakin): Annual Address.

THURSDAY (8th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-st., Cavendish-square, W.).—8 P.M. Cases will be shown by Mr. A. Lawson, Mr. G. Coats, Mr. S. Morison, and others, 9 P.M. Clinical Evening.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-st., Edgware-road, W.).—Papers:—Mr. C. Williams: The Ethics of the Profession in Relation to Syphilis, and Gonorrhoea.—Dr. J. Perkins: Tubercular Pleurisy: its Treatment and Diagnosis by X-ray Methods.

BRITISH GYNECOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Dr. Jellett: (1) Advanced Carcinoma of both Ovaries; (2) Decidua Placentalis associated with the Presence of a Four Months Extra-uterine Foetus.—Dr. B. Fenwick: Two Cases of Fibroid Cervix.

complicated by Pregnancy.—Dr. H. Macnoughton-Jones: A Note on Oxya of the Vagina. Paper.—Dr. Jellett: Notes on Two Rare Conditions met with in the Pelvis during Operation. The President; Inaugural Address.

CHILDREN SOCIETY AND THE BRITISH CHILD STUDY ASSOCIATION (Parker Museum, Margaret-street, W.).—8 P.M. Lecture.—Mr. J. C. Hudson: American Schools and their Relation to the Child and to Society. (Arranged by the British Child-Study Association.)

FRIDAY (9th).—CLINICAL SOCIETY OF LONDON (23, Hanover-square, W.).—8.30 P.M. Papers.—Mr. B. G. A. Moynihan: A Review of 59 Cases of Cancer of the Stomach treated by Operation.—Mr. J. Sherren: Three Cases of Intestinal Obstruction.—Dr. Garrod and Dr. Langmead: Associated Malformations, including Transposition of Viscera.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. J. M. H. MacLeod: Clinique. (Skin). 5.15 P.M. Lecture.—Dr. L. Williams: The Therapeutics of Some Common Ailments.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Hood: Mitral Stenosis. (Lecture I.)

TUESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. T. Williams: Clinique. (Medical). 5.15 P.M. Lecture.—Dr. D. Grant: The Dangerous Sequelæ of Suppuration in the Middle Ear.—Diagnosis.

POST-GRADUATE COLLEGE (London County Asylum, Claybury, Woodford Bridge, Essex).—3 P.M. Dr. R. Jones: Types of Mental Diseases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.50 P.M. Clinical Lecture.—Dr. J. Taylor: Epilepsy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on Delusional Insanity.

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METEOROLOGICAL READINGS.

(Taken daily at 8.20 a.m. by Standard Instruments.)

THE LANCET Office, Feb. 1st, 1906.

Date.	Barometer reduced to Sea Level at 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation.	Max. temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 28	29.91	W.	0.09	57	54	43	46	47	Overcast.
" 27	29.12	W.	—	75	53	47	47	49	Clouds.
" 26	29.20	S.W.	—	63	52	47	48	48	Clouds.
" 25	29.10	W.	—	77	52	48	48	48	Overcast.
" 24	29.35	S.W.	0.02	65	50	35	36	38	Overcast.
" 31	29.37	W.	—	51	48	33	30	41	Foggy.
Feb. 1	29.22	S.W.	—	49	45	30	34	45	Overcast.

Communications, Letters, &c., have been received from—

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ON

APHASIA.

Delivered before the Royal College of Physicians of
EdinburghBy BYROM BRAMWELL, M.D. EDIN., F.R.C.P.
EDIN., F.R.S. EDIN.,PHYSICIAN TO THE EDINBURGH ROYAL INFIRMARY; LECTURER ON
CLINICAL MEDICINE IN THE SCHOOL OF THE ROYAL
COLLEGE, EDINBURGH, 17C.LECTURE II.¹THE CONSTRUCTION AND FUNCTION OF THE AUDITORY
SPEECH MECHANISM.

MR. PRESIDENT AND FELLOWS.—In order that the clinical features of auditory aphasia (word deafness) and of its different varieties may be clearly understood it is essential to come to a conclusion, so far as our present knowledge will enable us to do so, with regard to: (1) the position of the auditory centre in the cerebral cortex; (2) the course which the nervous impulses concerned in the hearing of speech sounds take in their passage from the ear to the auditory speech centre; (3) the function of the auditory speech centre; and (4) the manner in which auditory speech symbols (spoken words) are brought into relationship with the associated ("ideational") centres and so with the processes of thought. No one of these points can be said to be definitely settled. Leading authorities on aphasia hold different opinions with regard to each and every one of them.

THE POSITION OF THE CORTICAL CENTRE FOR HEARING.

The sound vibrations which constitute spoken words after entering the ear and being received on the end-organs of hearing stimulate (give rise to) nervous impulses which are conveyed by the auditory nerve and its upward prolongations to the auditory centre in the cerebral cortex.

Experimenters are not agreed as to the position of the auditory centre in the lower animals. Ferrier places it in the upper temporo-sphenoidal convolution. He found that in monkeys "electrical stimulation of the first temporo-sphenoidal convolution was attended with pricking of the opposite ear, wider opening of the eyes, dilatation of the pupil, and turning of the head and eyes to the opposite side—just the phenomena which occur when a loud noise is made in immediate proximity to the ear;" and that destruction of the upper temporo-sphenoidal convolution was followed by permanent deafness in the opposite ear. Bohlfers and Sanger Brown found that in monkeys complete destruction of the upper temporo-sphenoidal convolution—indeed of the whole of both temporo-sphenoidal lobes—did not produce total deafness. A. W. Campbell suggests as a probable explanation of these different results that Schüller and Sanger Brown failed completely to remove and destroy the transverse temporal gyrus of Heschl, which he (Campbell) thinks constitute the area of cortex in which simple auditory stimuli are (mainly) received. In man the auditory centre seems undoubtedly to be located in the upper part of the temporo-sphenoidal lobe. The general view is that the auditory centre is situated in the first or upper temporo-sphenoidal convolution. It would also appear that the posterior part (half or two-thirds) of the second temporo-sphenoidal convolution forms part of the auditory speech centre. Further, clinicopathological observations in man seem to suggest that in the cortical centre for hearing (the auditory centre as a whole) there are separate nervous mechanisms for the registration of: (a) ordinary sounds; (b) musical sounds; and (c) speech sounds.

If it be granted that the auditory centres for ordinary sounds, for musical sounds and for speech sounds, are all situated in, and confined to, the first or upper temporo-sphenoidal convolution, Professor Edgri's case of tone deafness (to which I will refer in detail in the next lecture)

would seem to show:² 1. That the anterior part of the auditory centre (first temporo-sphenoidal convolution) in both hemispheres of the brain is perhaps the part (or the chief part) of the (main) auditory centre in which ordinary sounds are received and registered and brought into connexion with the other parts of the cerebral cortex.³ 2. That the middle part of the auditory centre (first temporo-sphenoidal convolution) in each hemisphere is probably the part of the (main) auditory centre which is concerned, or which is chiefly concerned, with the reception and registration of musical sounds—i.e., is the "auditory tone centre."

But it is doubtful if the auditory centre for ordinary sounds, for musical sounds, and for speech sounds is confined to the first or upper temporo-sphenoidal convolution. Campbell, as I will presently point out, believes that the lower centre for hearing is situated in the transverse temporal gyrus of Heschl. We may term the parts of the main auditory centre in which ordinary sounds and musical sounds are received and registered the *lower* auditory centre. The posterior part of the auditory centre (first temporo-sphenoidal convolution), and probably also the adjacent part of the second temporo-sphenoidal convolution (and perhaps a still more extensive area of the temporo-sphenoidal lobe), is undoubtedly the part of the auditory centre in which speech sounds (auditory speech symbols) are, probably after having passed through the lower auditory centre or centres, received, registered, and brought (or chiefly brought) into connexion with other parts of the cerebral cortex.⁴

In most normal individuals the auditory speech centre, or the *higher* auditory centre, as it may also be termed, is chiefly, and in some persons perhaps only, active on the left side of the brain. It is obvious, because of the much larger number of different sound combinations (spoken words) which it has to register and to bring into connexion with so many other parts of the cerebral cortex, that the higher auditory centre (the auditory speech centre) must be a much larger and a much more elaborate mechanism than the lower auditory centre. It seems to me not unreasonable to suppose that auditory speech symbols (spoken words) are first received and registered in the lower auditory centre or centres in which they are heard, so to speak, merely as sounds and combinations of sounds. But whether this is so or not, it is certain that in order that they may be understood (interpreted as speech symbols), i.e., in order that they may be brought into connexion with associated ("ideational") centres in other parts of the cerebral cortex (in which the memories of object-percepts and other percepts are stored), they must reach and pass through the higher auditory centre—i.e., the auditory speech centre.

¹ In this case the patient, though able to hear, differentiate, and understand both ordinary (non-musical) sounds and speech sounds, was completely tone deaf, as it has been termed. This case seems to suggest (a) that a special part of the auditory centre is concerned with the reception and registration of musical sounds; and (b) that part of the first temporo-sphenoidal convolution on both sides of the brain.

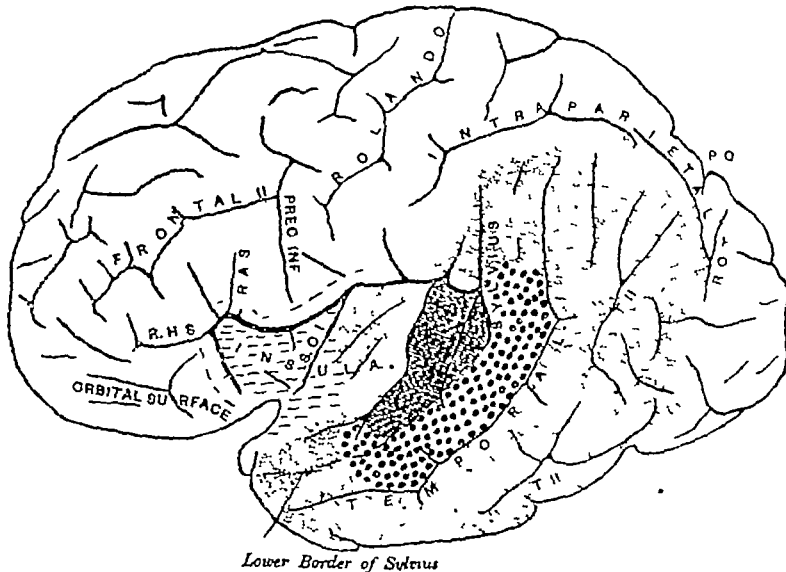
² The report produced by the discharge of a pistol, a shot gun, a rifle, and a small field gun can all be easily differentiated by an experienced observer, and in order that they may be differentiated a connexion must be formed between the cell groups of the auditory centre, in which they are received and registered, and the cell groups in other parts of the cerebral cortex (more especially of the visual cortex), in which the visual and other memories of the particular kind of gun the discharge of which the observer knows by experience is associated with a particular report are stored. But whether these connexions are established in the lower auditory centre or in a part of the higher auditory centre is doubtful. The connexion is probably as Bastian terms it.

³ By this statement I do not mean to imply that the portions of the main auditory centre (the cortical centre for hearing taken as a whole), which I have termed the higher and lower auditory centres, are sharply defined and separated one from the other. Possibly the cell and fibre mechanisms concerned with the hearing of ordinary sounds, though chiefly located in one part, may be more or less diffuse throughout the whole of the auditory centre. It seems certain, however, that the cell and fibre mechanisms, in which the memories of auditory speech symbols are stored, are situated, or chiefly situated, in the posterior part (half or two-thirds) of the first and in the adjacent part of the second temporo-sphenoidal convolutions. Further, it is not speech centres that part of the cortex in which auditory speech symbols are brought into connexion with the other parts of the cortex, may be a part of the temporo-sphenoidal lobe. I will return to this point later. In Bastian has applied to certain areas of the brain cortex which are in close juxtaposition to those portions of the cortex to which the term

In his recently published and most important research, entitled, "Histological Studies on the Localisation of Cerebral Function" (Chapter VI.), Campbell concludes, and to my mind gives very strong grounds for concluding: (1) that the area of cortex laid down for the primary reception of simple auditory stimuli is that which he has mapped out and described as mainly covering the transverse temporal gyri of Heschl; this he terms the audito-sensory area; and (2) that the posterior three-fifths of the free surface of the first temporal gyrus is a second auditory centre specialised for the interpretation and further elaboration of primary auditory stimuli; this area, which forms a skirt for the audito-sensory area, he terms the audito-psycho area (see Fig. 7).

(b) Destruction of the left auditory speech centre, though it may produce complete word deafness (which is rarely, if ever, permanent), certainly does not produce complete and permanent deafness to ordinary sounds in either ear and does not necessarily produce tone deafness or auditory amusia. Hence we must conclude, whatever view we take as to the decussation of the auditory nerve (whether we believe the decussation to be complete or incomplete), that ordinary sounds (and musical sounds) are received and registered in some other portion of the auditory centre than that special part which we term the auditory speech centre. We may term this part of the general auditory centre in which ordinary sounds are received and registered, the *lower centre for hearing*; and there must, of course, be a

FIG. 7.



Drawing of left cerebral hemisphere (human) with Sylvian fissure opened out. (After A. W. Campbell.) Showing (1) the audito-sensory area (shaded) confined to the two transverse temporal gyri and not extending on to the insula, (2) the audito-psycho area (large dots) on the free surface of the posterior three-fifths of the first temporal gyrus, and (3) the extent, on the lateral surface of the hemisphere, of the common temporal cortex (small dots). S. C. I. = sulcus centralis insulae, R. H. S. = ramus horizontalis Sylvii, R. A. S. = ramus ascendens Sylvii, Prec. Inf. = sulcus precentralis inferior, P. O. = parieto-occipital fissure, R. O. T. = ramus occipitalis transversus, T. H. = sulcus temporalis secundus.

THE COURSE OF THE AUDITORY PATH; SEMI- OR PARTIAL DECUSSATION OF THE AUDITORY NERVE.

An analysis of the clinical phenomena presented by cases of disease in man seems to show that the nervous impulses concerned in the hearing, both of ordinary sounds and of speech sounds (spoken words), are carried by each auditory nerve to both auditory centres. The grounds for this conclusion are—

(a) Sudden and complete destruction of the left auditory speech centre results in the production of word deafness³ but destruction of one auditory nerve (or, what is the same thing, complete deafness in one, in either ear) does not produce word deafness. Consequently, in those persons in whom the auditory speech centre is only active on the left side of the brain, and for the sake of simplicity I am supposing that this is the case, the auditory impressions representing words, which enter by either—say the left—ear, must ultimately arrive at the left auditory speech centre.⁴

³ The word deafness is, as we shall afterwards see, in many cases incomplete and more or less quickly recovered from, presumably owing to the fact that the auditory speech centre in the right hemisphere is able to take up and carry on the function of the left auditory speech centre which is destroyed.

⁴ Reasoning on these facts Lichtheim concluded that the decussation of the fibres of the auditory nerve cannot be complete and that the form of word deafness which is termed sub-cortical (which I term sub-central) "can obviously come into existence only if the irradiations of both acoustic nerves in the left temporal region are broken through." Bastian disputes these conclusions. He states that a semi-decussation of the auditory nerve has not been proved anatomically, he thinks that the decussation of the auditory nerve is complete and that auditory impressions which enter through one—say the left—ear ultimately reach the left auditory speech centre through the corpus

callosum, in other words that they first pass to the right auditory speech centre and thence across the corpus callosum to the left auditory speech centre. I agree with Lichtheim (though not exactly for the reasons which he gives) that the decussation of the auditory nerve is incomplete—in other words, that the auditory nerve on one—say the left—side carries auditory impressions to both auditory centres. As stated above, it is probable, I think, that the nervous impulses which convey, so to speak, spoken words, first pass to the lower auditory speech centres on both sides of the brain and then to the auditory speech centre in the left hemisphere, further, it is certain that sub-central auditory aphasia may be, and probably in most instances is, produced in other ways than that which Lichtheim supposes. I will return to this point in the next lecture.

proved by the following facts.—

(c) Complete and permanent deafness in one—the opposite ear very rarely, if ever, results from a localised lesion in any part of the cerebral cortex. So far as I know there are no facts to show that destruction of either the lower or the higher auditory centre, in one hemisphere, ever produces complete and permanent deafness in the opposite ear, as it would necessarily do if the decussation of the auditory nerve were complete. The deafness which results from destruction of the cortical centre for hearing on one side of the brain is usually only partial, and even if it should be complete immediately after the occurrence of the lesion it never, so far as I know, remains complete, it is always in some degree, and almost always, so far as I know, in a

very large degree, recovered from. The rapid recovery is no doubt due to the fact that the cortical centre for hearing in the opposite hemisphere takes up and carries on the functions of the centre which is destroyed. Now, it could only do so if the decussation were incomplete.

(d) Again, we know that this arrangement (semi- or partial decussation) occurs in the case of the optic and of the olfactory and probably also of the gustatory nerves. There is presumptive evidence therefore that the same plan of construction which obtains in the case of the optic nerve and of the olfactory nerve, and probably also of the gustatory nerve, holds good in the case of the auditory nerve.*

(e) Further, actual observation seems to show that a partial or semi-decussation of the auditory nerves does actually occur. Alexander Bruce, for example, states: "The cochlear root terminates in the anterior accessory nucleus of Meynert (or cochlear nucleus) and the tuberculum acusticum, a narrow nucleus continuous with the former, and lying like a cap on the restiform body. From these nuclei secondary connexions are formed through the corpus trapezoidum and the striæ acusticæ. The corpus trapezoidum sends fibres to the superior olives of both sides, to both posterior corpora quadrigemina, and to the opposite internal corpus geniculatum." This last-named structure is directly connected with the superior temporal gyrus by fibres which complete the central path for hearing. This is further strengthened by connexions of each posterior corpus quadrigeminum with the internal geniculate body of its own side (see Fig. 8). The

FIG. 8.

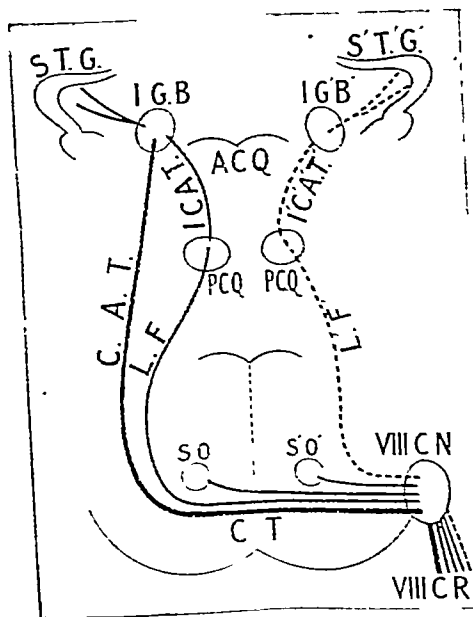


Diagram of the central path for hearing, showing the channels by which auditory impressions reach both hearing centres in the cerebral cortex (after A. Bruce). VIII.C.R. = cochlear root. VIII.C.N. = cochlear nucleus. CT = corpus trapezoidum. S.O. and S.O. = superior olive, left and right. L.F. and L.F. = lateral fissure, left and right. C.A.T. = central auditory tract on the left side, right; C.A.T. = central auditory tract on the right side, left. P.C.Q. and P.C.Q. = posterior corpus quadrigemina: left and right. A.C.Q. = anterior corpus quadrigemina: left and right. I.G.B. and I.G.B. = internal geniculate body, left and right. S.T.G. and S.T.G. = superior temporal gyrus, left and right.

path of the striæ acusticæ is not so well established. They can be followed from the tuberculum acusticum inwards across the floor of the fourth ventricle to the raphe where they pass directly forwards. According to Kölliker they pass round the pyramids of the upper medulla and enter

the restiform body of the opposite side. This view still awaits confirmation."*

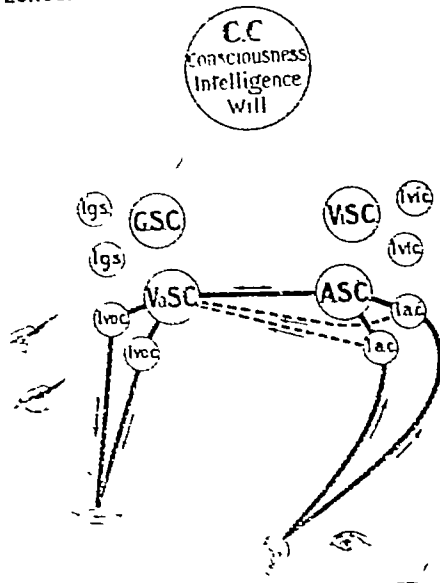
THE FUNCTION OF THE AUDITORY SPEECH CENTRE.

The auditory speech centre seems to be: 1. A centre, in which auditory speech symbols (after they have passed through the lower auditory centre, where they are perceived merely as sounds) are received, registered, and brought into relationship by connecting fibres with the associated "ideational" centres; the other centres of the cerebral cortex in which the meaning of words (object-percepts and other percepts) is received, registered, and stored. (see Fig. 2, Lecture I.).

2. A centre through which (i.e., from which) the nervous impulses concerned in the production of repeated (echoed) speech pass in order to reach the vocal speech centre (see Fig. 9). This at all events is the view of most authorities. Its correctness is, I think, doubtful; it is doubtful whether it holds good in all cases. It is probable, I think, that in certain circumstances, and perhaps in some individuals at all events, the nervous impulses concerned in the production of repeated (echoed) speech pass through the lower auditory centre (and not through the higher or auditory speech centre) to the vocal speech centre (i.e., along the dotted lines, from I.a.c. and I.a.c.' to Vo.S.C. in Fig. 9). This

FIG. 9.

ECHOED SPEECH—MEANING NOT UNDERSTOOD



Diagrammatic representation of the course which the nervous impulses concerned in the production of repeated or echoed speech take. In ordinary circumstances the nervous impulses concerned in repeated and echoed speech, after passing to the auditory speech centre (A.S.C.) through the lower auditory centres (I.a.c. and I.a.c'), pass from the auditory speech centre (A.S.C.) to the vocal speech centre (Vo.S.C.), and thence outwards through the lower vocal centres (L.V.C. and I.V.C.) to the lips, tongue, larynx, &c. as shown by the solid lines in the figure. But it is possible, I think, that in certain circumstances (i.e., after destruction of the auditory speech centre) repeated or echoed speech may still be carried out through the dotted lines which pass from the lower auditory centres (I.a.c. and I.a.c') to the vocal speech centre (Vo.S.C.).

point is of considerable importance, as we shall see when I come to describe the points of distinction between the different forms of auditory aphasia.

3. A centre in which (it seems probable, so far as our present knowledge enables us to judge), in most normal individuals and in ordinary circumstances at least, thoughts and ideas are first put into concrete speech form in order that they may be transmitted to the vocal speech centre. The nervous impulses concerned in the production of spontaneous vocal speech seem to pass directly from the

* I may add that the plan of construction of the cerebral nervous mechanisms connected with vision (i.e., the fact that there are undoubtedly lower and higher centres for vision in the cerebral cortex) is also suggestive of the fact that there are both higher and lower centres for hearing.

* Campbell says the middle geniculate body.

very large degree, recovered from. The rapid recovery is no doubt due to the fact that the cortical centre for hearing in the opposite hemisphere takes up and carries on the functions of the centre which is destroyed. Now, it could only do so if the decussation were incomplete.

(d) Again, we know that this arrangement (semi- or partial decussation) occurs in the case of the optic and of the olfactory and probably also of the gustatory nerves. There is presumptive evidence therefore that the same plan of construction which obtains in the case of the optic nerve and of the olfactory nerve, and probably also of the gustatory nerve, holds good in the case of the auditory nerve.*

(e) Further, actual observation seems to show that a partial or semi-decussation of the auditory nerves does actually occur. Alexander Bruce, for example, states: "The cochlear root terminates in the anterior accessory nucleus of Meynert (or cochlear nucleus) and the tuberculum acusticum, a narrow nucleus continuous with the former, and lying like a cap on the restiform body. From these nuclei secondary connexions are formed through the corpus trapezoidum and the striæ acusticæ. The corpus trapezoidum sends fibres to the superior olives of both sides, to both posterior corpora quadrigemina, and to the opposite internal corpus geniculatum.[†] This last-named structure is directly connected with the superior temporal gyrus by fibres which complete the central path for hearing. This is further strengthened by connexions of each posterior corpus quadrigeminum with the internal geniculate body of its own side (see Fig. 8). The

FIG. 8.

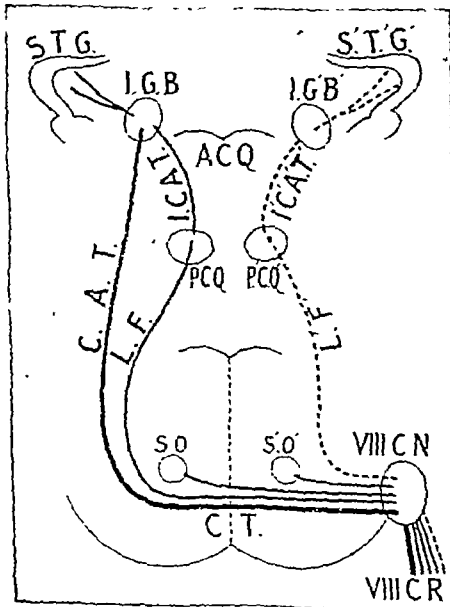


Diagram of the central path for hearing, showing the channels by which auditory impressions reach both hearing centres in the cerebral cortex (after A. Bruce). VIII.C.R. = cochlear root, VIII.C.N. = cochlear nucleus, C.T. = corpus trapezoidum; S.O. and S.O. = superior olive, left and right, L.F. and L.F. = lateral fissure, left and right; C.A.T. = central auditory tract on the left side, P.C.Q. and P.C.Q. = posterior corpus quadrigeminum, left and right; A.C.Q. = anterior corpus quadrigeminum, I.G.B. and I.G.B. = internal geniculate body, left and right; S.T.G. and S.T.G. = superior temporal gyrus, left and right.

path of the striæ acusticæ is not so well established. They can be followed from the tuberculum acusticum inwards across the floor of the fourth ventricle to the raphe where they pass directly forwards. According to Kölliker they pass round the pyramids of the upper medulla and enter

the restiform body of the opposite side. This view still awaits confirmation."

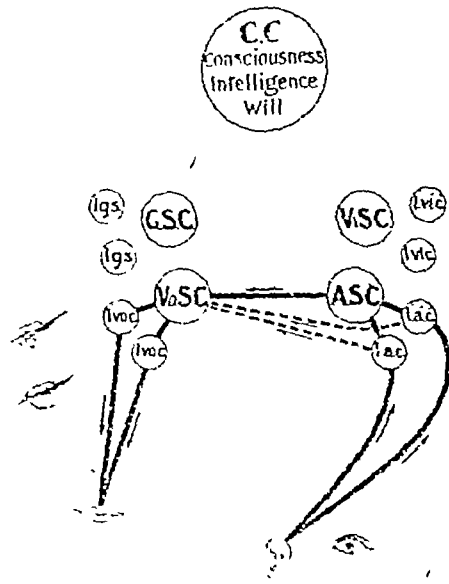
THE FUNCTION OF THE AUDITORY SPEECH CENTRE.

The auditory speech centre seems to be: 1. A centre, in which auditory speech symbols (after they have passed through the lower auditory centre, where they are perceived merely as sounds) are received, registered, and brought into relationship by connecting fibres with the associated "ideational" centres; the other centres of the cerebral cortex in which the meaning of words (object-percepts and other percepts) is received, registered, and stored. (see Fig. 2, Lecture I.).

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FIG. 9.

ECHOED SPEECH—MEANING NOT UNDERSTOOD



Diagrammatic representation of the course which the nervous impulses concerned in the production of repeated or echoed speech take. In ordinary circumstances the nervous impulses concerned in repeated and echoed speech, after passing to the auditory speech centre (A.S.C.) through the lower auditory centres (l.a.c. and l.a.c'), pass from the auditory speech centre (A.S.C.) to the vocal speech centre (Vo.S.C.) and thence outwards through the lower vocal centres (l.v.c. and l.v.c') to the lips, tongue, larynx, &c. as shown by the solid lines in the figure. But it is possible, I think, that in certain circumstances (i.e., after destruction of the auditory speech centre) repeated or echoed speech may still be carried out through the dotted lines which pass from the lower auditory centres (l.a.c. and l.a.c') to the vocal speech centre (Vo.S.C.).

point is of considerable importance, as we shall see when I come to describe the points of distinction between the different forms of auditory aphasia.

3. A centre in which (it seems probable, so far as our present knowledge enables us to judge), in most normal individuals and in ordinary circumstances at least, thoughts and ideas are first put into concrete speech form in order that they may be transmitted to the vocal speech centre. The nervous impulses concerned in the production of spontaneous vocal speech seem to pass directly from the

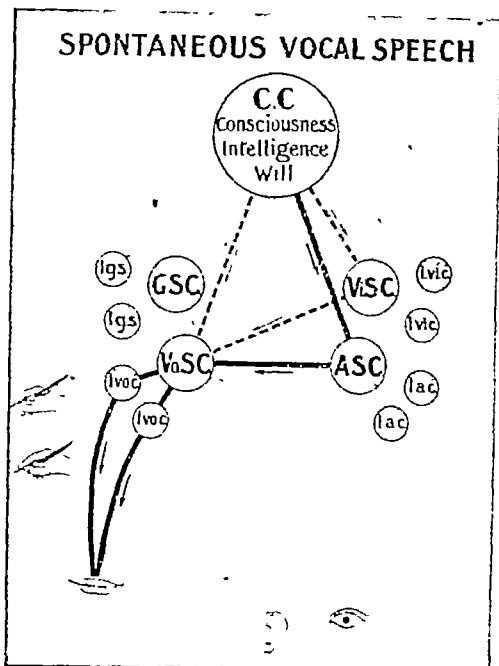
* I may add that the plan of construction of the cerebral nervous system is such, as to ensure the fact that there are no centres for vision in the cerebral cortex which are both higher and lower centres for hearing.

† Campbell says the middle geniculate body.

auditory speech centre to the vocal speech centre (see Fig. 10).

4. A centre to which (it seems probable, so far as our present knowledge enables us to judge), in most normal individuals and in ordinary circumstances at least, visual or written speech symbols pass in order that they may be

FIG. 10.



Diagrammatic representation of the course which the nervous impulses concerned in the production of spontaneous vocal speech take. In ordinary circumstances the nervous impulses pass from C.C. to A.S.O. (auditory speech centre), from which they pass through the solid line to the vocal speech centre (V.O.S.C.) and thence out in the ordinary manner. If, however, the auditory speech centre (A.S.O.) is destroyed it is probable that compensation may be effected by the nervous impulses passing from C.C. to the vocal speech centre, either through the visual speech centre (V.I.S.C.) or directly as is represented by the dotted line.

brought into connexion with the associated ("ideational") centres (see Fig. 11).

5. A centre in which (it seems probable, so far as our present knowledge enables us to judge), in most normal individuals and in ordinary circumstances at least, thoughts and ideas are first put into concrete speech form in order that they may be transmitted to (a) the visual speech centre and (b) the graphic speech centre.

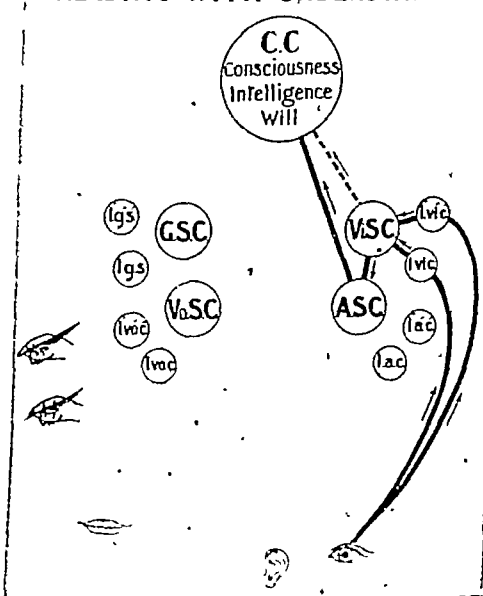
It seems probable, so far as our present knowledge enables us to judge, that in most normal individuals the nervous impulses concerned in the production of spontaneous written speech pass indirectly from the "ideational" centres to the visual and graphic speech centres—i.e., through the auditory speech centre to the visual speech centre from which they finally pass to the graphic centre (see Fig. 12). In other words, that thoughts which are to be expressed in written speech are first put into concrete speech form in the auditory speech centre, from which they pass to the visual speech centre, in which they are translated into visual speech symbols, and from the visual speech centre they pass to the graphic ('speech') centre from which they are emitted in the form of the nervous impulses required for the production of the necessary movements concerned in the required written speech (graphic) characters.

It will be noticed that I speak with hesitation and qualification regarding several of the previous headings. It is probable, I think, that in some normal individuals (in persons who are, as it is termed, strong "visuals," and perhaps in many persons after the act of reading has become so well trained as to be, so to speak, automatic) the nervous impulses concerned in reading with understanding and spontaneous writing may pass directly, in the case of reading, from the visual speech centre to the "ideational" centres, and, in the case of spontaneous writing, from the "ideational" centres to the visual speech centre and

so to the writing centre along the dotted lines in Figs. 11 and 12 (and not indirectly—i.e., through the auditory speech centre along the course of the solid lines in Figs. 11 and 12). If this were so, destruction of the auditory speech centre would not disturb the action of the visual speech centre and would not entail defects in reading and writing (as it usually seems to do). It seems certain that, if the auditory speech centre is destroyed, the visual speech centre can (in many cases at least) be trained to play directly upon the "ideational" centres; and that in this way defects in reading and writing, which may be present in the early stages of cases of word deafness due to destruction of the auditory speech centre, can be compensated. Nevertheless, it seems highly probable that, in ordinary circumstances and in most normal individuals, the auditory, visual, and kinesthetic speech centres are so closely linked together that the active functioning of any one of them is attended with some change in the functional activity of the others and, *vice versa*, a lesion, more especially a suddenly developed lesion, in any one of these centres will probably (in most individuals at least) produce some functional derangement in the action of the others, though the degree of that derangement will doubtless vary in accordance with the speech

FIG. 11.

READING WITH UNDERSTANDING



Diagrammatic representation of the course which the nervous impulses concerned in reading with understanding take. The visual impressions pass from the eye to the lower visual centres (V.I.C. and V.I.C.) from which they pass to the visual speech centre (V.I.S.C.); from the visual speech centre the nervous impulses then probably pass to the auditory speech centre (A.S.O.) and from the auditory speech centre to the associated "ideational" centres (C.C.) as is represented by the solid line; but in certain individuals and in some cases of disease, as, for example, where the auditory speech centre or the commissural connexion between the visual speech centre and auditory speech centre is destroyed, the nervous impulses after reaching the visual speech centre (V.I.S.C.) may probably pass directly to the associated "ideational" centres (C.C.) as is represented by the dotted line.

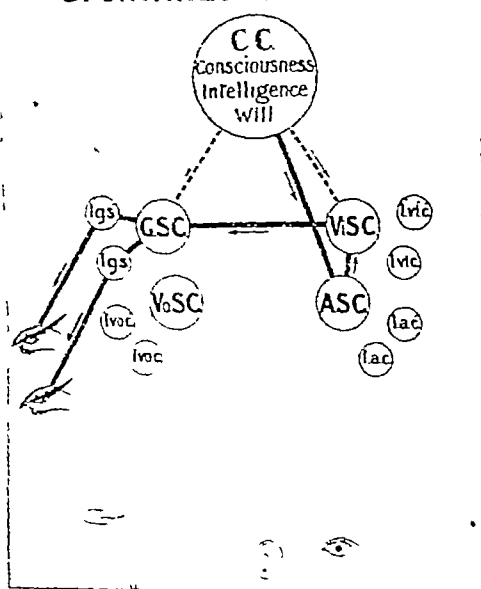
centre which is primarily affected (being greatest, for example, when the auditory speech centre is the seat of the lesion) and with the special functional endowments of the individual (i.e., whether he is an "auditive," a "visual," or a "kinesthetic").

That the auditory, visual, and kinesthetic speech centres are so closely linked together that the active functioning of any one of them is attended with some change in the functional activity of the others seems proved not only by the clinical symptoms which result from localised lesions of these centres, but also by the fact that while learning to read and write the child usually in the act of reading letters and words at the same

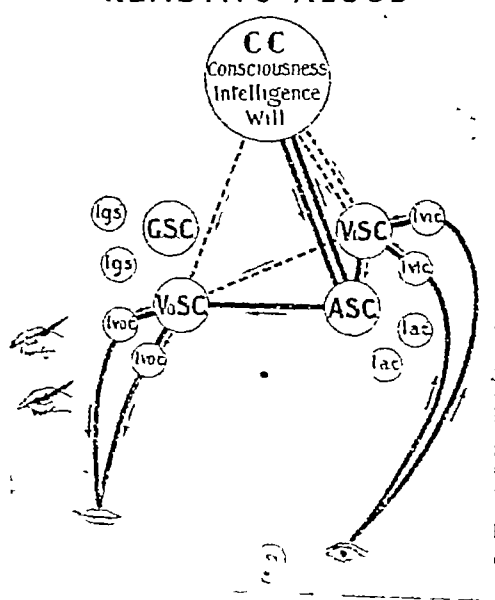
expect: 1. Abolition of the power of understanding auditory speech symbols (spoken words) and what, practically speaking, amounts to the same thing, inability to identify (pick out by the aid of the other senses, sight, touch, smell, or taste) an object or written word named. 2. Defects in the production of vocal speech (repeated and spontaneous) (see Figs. 2 and 9). 3. Defects in the power of understanding written speech symbols, in reading, and of vocally repeating written speech symbols—i.e., reading aloud (see Fig. 13). 4. Defects in the production of written speech (spontaneous writing and writing to dictation) (see Fig. 14). 5. Inability to name objects presented to the other senses (objects seen, touched, smelt, tasted) (see Fig. 15).

THE RELATIONSHIP OF THE AUDITORY SPEECH CENTRE TO
THE "IDEATIONAL" CENTRES AND THE PROCESS
OF THOUGHT.

That the auditory speech centre is a centre in which auditory speech symbols (word percepts) are brought into connexion with the memory pictures (ideas, the object and other percepts) which are stored in the other centres of the cerebral cortex—the "ideational" centres—seems to be confirmed by a study of the development of speech in the child.



READING ALOUD



Diagrammatic representation of the course which the nervous impulses concerned in reading aloud take. The nervous impulses pass from the eye through the lower visual centres to the visual speech centre, thence, in ordinary circumstances, and in most normal individuals, they would seem to pass to the auditory speech centre and from the auditory speech centre to the associated "ideational" centres (C.C.), where their meaning is fully understood in consciousness. From the "ideational" centres (C.C.) the nervous impulses then pass to the auditory speech centre and out in the ordinary way through the vocal speech centre and lower vocal centres—i.e., through the solid lines in the figure. If the meaning of the words is not fully understood the nervous impulses after reaching the auditory speech centre pass directly to the vocal speech centres—i.e., without passing to the "ideational" centres (C.C.); or perhaps in some cases directly from the visual speech centre (V.S.C.) to the vocal speech centre (V.O.S.C.), through the dotted line in the figure—i.e., without passing through the auditory speech centre.

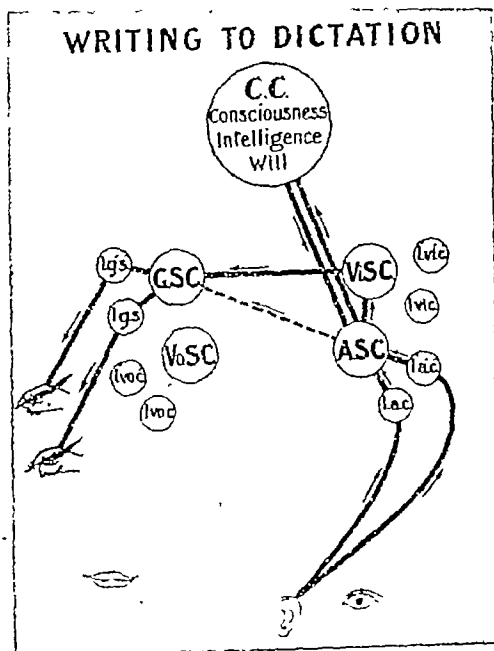
Long before the infant forms any intelligent idea of speech sounds and visual pictures (objects) he is able to perceive noises and visual impressions of light, form, and colour. These elementary auditory and visual impressions are no doubt received and registered in the lower auditory and visual (half-vision) centres. The young child next learns to perceive and intelligently to recognise objects and speech sounds. He is then taught to form associations in consciousness, or associations in consciousness are spontaneously formed (without teaching), between the impressions which reach the brain through these two different

THE EFFECTS OF DESTRUCTION OF THE AUDITORY SPEECH CENTRE.

Now, if the auditory speech centre is possessed of the functions which have just been enumerated, sudden and complete destruction of the auditory speech centre should, in most normal individuals (theoretically, at least), produce the effects enumerated below and, speaking generally, such is the case, but for reasons which have just been indicated and which will be afterwards explained in more detail, some of these defects are in many cases much less marked than one might at first sight and on theoretical grounds

sensory channels. The child sees the object "dog," and his mother names the object "dog" or "bow-wow." When this procedure has been frequently repeated the child comes to associate the auditory speech symbol "dog" or "bow-wow" with the object "dog." And it must be remembered that not only is an intimate connexion formed in consciousness between these two sensory impressions, but—what is, I think, a very remarkable fact when we remember that it applies to the most intricate processes which take place in the marvellously intricate nervous mechanisms of the brain—an actual physical connexion—a nerve connexion is

FIG. 14.



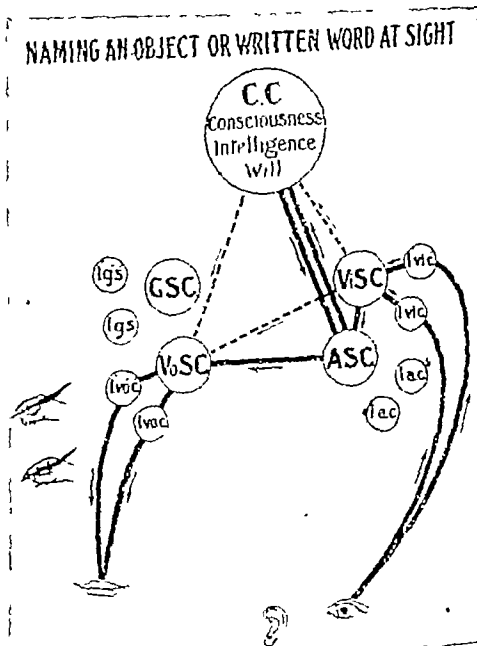
Diagrammatic representation of the course which the nervous impulses concerned in writing to dictation take. If the meaning of the words is understood the nervous impulses after reaching the auditory speech centre (A.S.C.) pass to the associated "Ideational" centres (I.O.C.); then from the "Ideational" centres back to the auditory speech centre; thence to the visual speech centre (V.I.S.C.) and from the visual speech centre to the graphic speech centre (G.S.C.) and out in the ordinary way through the lower graphic centres to the right hand. If the meaning of the words is not understood the nervous impulses may, after reaching the auditory speech centre, pass to the visual speech centre and thence out to the graphic speech centre, i.e. without passing to the "Ideational" centres (I.O.C.), or perhaps in some conditions of disease directly from the auditory speech centre (A.S.C.) to the graphic speech centre (G.S.C.), as is represented by the dotted line in the figure.

formed between the cell group in the higher auditory centre which represents the word "dog" or "bow-wow," and the cell group in the visual centre which receives and registers the image of the object "dog." After frequent repetition the connexion becomes so perfect, the connecting tracts so well worn, that whenever the child hears the sound (word) "dog" or "bow-wow" he looks about for, and fixes his eyes upon, the object—the dog; or, if the object is not present, he mentally pictures to himself (i.e., thinks of) the object—it raises up in the mind the memory or mental picture of the object "dog." In other words, the stimulus which is in this case primarily received by the cell group in the auditory centre which represents the sound (word) "dog" flows over from the auditory speech centre to the associated cell group in the visual centre and excites the visual memory of the object "dog." This is the basis of all intellectual operations—the association of ideas. So, too, whenever the child sees the object "dog" the stimulus flows over from the cell group in the visual centre, which receives it, to cell group in the auditory centre, the auditory speech centre the associated cell group in the auditory speech centre in which the auditory speech symbol "dog" or "bow-wow" is represented; this cell group is in its turn stimulated and a memory of the word (name) "dog" or "bow-wow" is excited—the child thinks of the auditory speech symbol, the name "dog" or "bow-wow." The two centres (the visual

centre and the auditory speech centre) are in this way concurrently educated and taught to play one upon the other. By this process intimate connexions are formed between cell groups in these two great sensory centres (the visual and the higher auditory centres) and the names of various objects are taught and learned. In other words, the auditory speech symbols are not only brought into conscious relationship with the ideas which they symbolise and represent but the cell groups in the auditory speech centre in which the auditory speech symbols are received and registered are brought into anatomical and physiological relationship with the cell groups in the visual centre in which the visual impressions to which they correspond—i.e., which they symbolise—are received and registered.

The acquisition of attributes.—After a certain degree of education of the auditory speech centre, the visual centre, and the vocal speech centre (the centres concerned in the recognition of objects and movements (certain actions), in the comprehension and in the production of certain of the speech sounds (nouns and certain verbs expressive of certain actions) which represent the objects and visible movements which have been brought into organic cohesion and conscious association) has been acquired, information derived from the other sensory cerebral centres (the education of which has also been in process of development) is

FIG. 15.



Diagrammatic representation of the course which the nervous impulses concerned in the naming of an object or written word at sight take. In naming a written word at sight the nervous impulses pass from the eye to the lower visual centres and thence to the visual speech centre (V.I.S.C.), from which they pass to the auditory speech centre (A.S.C.), then, if they are understood, they pass to the associated "Ideational" centres (I.O.C.), from which they pass back to the auditory speech centre (A.S.C.) and thence out to the vocal speech centre (V.O.S.C.) in the ordinary manner (through the solid lines in the figure). If, however, the written word is not understood the impulses after reaching the visual speech centre (V.I.S.C.), and passing to the auditory speech centre (A.S.C.) without passing to the vocal speech centre (V.O.S.C.) pass directly to the associated "Ideational" centres (I.O.C.); or perhaps in certain circumstances directly from the visual speech centre (V.I.S.C.) to the vocal speech centre (V.O.S.C.), as is represented by the dotted lines in the figure. In naming an object (not a written word) at sight the nervous impulses after reaching the lower visual centres pass to a higher visual centre (not represented in the diagram), and from this higher visual centre they pass to the auditory speech centre (A.S.C.) and thence out in the ordinary way.

brought into the connexion and the child learns to associate certain qualities or attributes with the objects which he recognises by the eye and the names of which he has come to recognise by the ear. He is taught, for example, to associate such speech sounds (adjectives) as

"sweet" and "nice" with objects, such as sugar, which taste sweet and which he likes. In other words, the conscious impression which is generated in the cell group in the gustatory centre, which is stimulated by the application of the substance sugar to the end-organs of the nerves of taste, is brought into relationship with the cell group in the auditory centre which is stimulated by the sound (word) "sweet" or "nice." As the child's experience enlarges he comes to associate, and is taught to associate, the terms (words) "sweet" and "nice," not only with the taste of sugar, but with everything which he likes—say with "papa," "mama," &c. He also learns to form contrasts, to compare such substances as sugar and salt and such terms as *nice* and *nasty*. In this way, through the different senses and through the cerebral connexions which are formed between the different sensory centres, the child gradually learns (acquires) a large number of different attributes (adjectives), such as *sweet*, *bitter*, *nice*, *nasty*, *good*, *bad*, *soft*, *hard*, *rough*, *smooth*, and so on.

It is doubtful whether—when the attribute has acquired a sufficiently wide meaning—the stimulation of the cell group, say in the gustatory centre, in which the memory picture of the (sweet) taste of sugar was originally implanted and stored (which results from the overflow, so to speak, from the cell group in the auditory speech centre corresponding to the word "sweet"), is sufficiently powerful to excite a conscious sensation—i.e., a memory of a sweet taste. The connexion between the two cell groups in the auditory speech centre which represent the terms "sweet" and "sugar" must, of course, be much more powerful, for—although few persons, if any, feel a conscious gustatory sensation (taste) of sweetness when either the one or the other term (*sweet* or *sugar*) is thought of¹⁰—whenever we talk of "sweet" we are prone to (inclined to) think of sugar—the type of a sweet thing, the original thing with which we associated the sensation of sweetness, and *vice versa*.

When the word "*sweet*" calls up in the mind the memory of sugar the nervous process is probably as follows. The cell group in the auditory speech centre representing the word *sweet* is first stimulated; the stimulation then passes to the closely associated cell group in the auditory speech centre, the term or word *sugar*; and then if the ideas (gustatory, visual, &c.) which represent the thing *sugar* are called up in the mind the stimulation passes to distant cell groups in the gustatory, visual, and other cortical centres in which the ideas which go to form the complex mental picture or idea of (in this case) the thing *sugar* are represented and stored. In this way connexions may be formed between cell groups in the auditory speech centre and cell groups in the other sensory centres in the cerebral cortex. The child, for example, learns to associate with the auditory symbol or word percept "*orange*," certain visual appearances representing the form, size, shape, and colour of the orange, and certain gustatory, olfactory, tactile, and kinæsthetic impressions representing the taste, smell, feel, and weight of the orange. When this process is completed the raising up in the mind of the auditory speech symbol—in other words, the stimulation of the cell group in the auditory speech centre representing the word "*orange*"—raises up in the mind, or may raise up in the mind, all the attributes of the orange which the individual has by experience learned or acquired, the memory pictures of which have been stored (imprinted) in other parts of the cerebral cortex. In other words, there is an overflow from the cell group in the auditory speech centre which represents the auditory speech symbol or word percept "*orange*," through the connecting fibres, either directly or indirectly, to many different associated centres in the cerebral cortex; and the stimulation of the associated cell groups in these different centres is attended in consciousness with the revival of the memory pictures of the different qualities or attributes of an orange with which the individual has by previous experience become acquainted.

The process of learning to understand speech sounds (spoken words) seems to consist, so far as the physical side of the process is concerned, in the formation of connexions

between (a) the cell groups of the auditory speech centre, in which the word percepts are stored, and (b) the cell groups of the other centres of the cortex, in which the object and other percepts which represent the ideas which the word percepts (names) symbolise are stored. In the case of highly complex abstract ideas the process is necessarily much more elaborate than the simple process which I have just described. Further, it must be remembered that in the auditory speech centre itself connexions are formed between different cell groups representing the synonyms of different word percepts which in the experience of the individual represent the same idea or ideas. Taking the simple illustration, for example, which has been already given, there must obviously be in the auditory speech centre of the child two cell groups corresponding to the words "*dog*" and "*bow-wow*." Again, to give another example, the auditory word percepts "*sweet*," "*nice*," "*agreeable*," "*pleasant*," which symbolise or which may symbolise the same idea, must all have cell groups in the auditory speech centre which are in intimate anatomical and physiological (physical) connexion one with another. Again, the same speech sound may have entirely different meanings in accordance with the context (the other speech sounds with which it is associated), and the intonation which is given to the sound—witness, for example, the word "*dam*" in the sentences, "*The dam in the river is, &c.*," "*Damn that boy.*" "*The river was dammed.*" "*Go and be damned.*" These considerations clearly show that the auditory speech centre must be a very elaborate nervous mechanism.

According to the view which has just been stated, the memory or mental pictures of auditory speech symbols or names (word percepts) of objects, attributes, ideas, &c., are stored in the auditory speech centre, but the memory pictures of the ideas which these names represent are not raised in the mind by mere stimulation of the nervous mechanisms (cell groups) in the auditory speech centre, in which the memory pictures of the auditory speech symbols (words) are stored. The revival in consciousness of the memories of the ideas which the word percepts symbolise necessitates an overflow of nervous impulses to, and the stimulation of, the corresponding cell groups in the associated ("ideational") centres, which are situated in other, and it may be very distant, parts of the cerebral cortex. It, of course, does not necessarily follow, although this no doubt may be the case, when we hear the name "*orange*" and we afterwards think of the different attributes or qualities of an orange, that all of the nervous impulses pass *directly* from the cell group in the auditory speech centre, representing the word "*orange*," to the associated cell groups in the other (ideational) centres in which the memory pictures of the qualities or attributes of the "*orange*" are stored. The process may be, and probably in most instances is, an indirect one. The word "*orange*" may raise up the visual picture (shape, size, colour) of an orange and the stimulus may next pass from the cell groups in the *visual* centre, in which these visual memory pictures of the orange are stored, say to the cell group in the gustatory centre in which the memory picture of the taste of the orange is stored; and from that centre to an associated cell group in the auditory speech centre in which the memory picture of the auditory speech symbol "*sour*" is stored, which will then be stimulated. Further, it is, of course, possible that the stimulus may pass from the cell group in the auditory speech centre in which the memory picture "*orange*" is stored to an associated cell group in the same centre—the auditory speech centre—in which the memory picture of the word "*sour*" is stored, provided the memory pictures (word percepts) of the terms *orange* and *sour* which are at rest in these two cell groups have become sufficiently linked together in consciousness and that the nervous overflow may pass from the cell group in the auditory centre which represents the word *sour* to the cell group in the gustatory centre in which the memory picture of the (sour) taste of an orange is stored. The view which I have advocated with regard to the relationship of the auditory speech centre and the "ideational" centres is not accepted by all authorities.

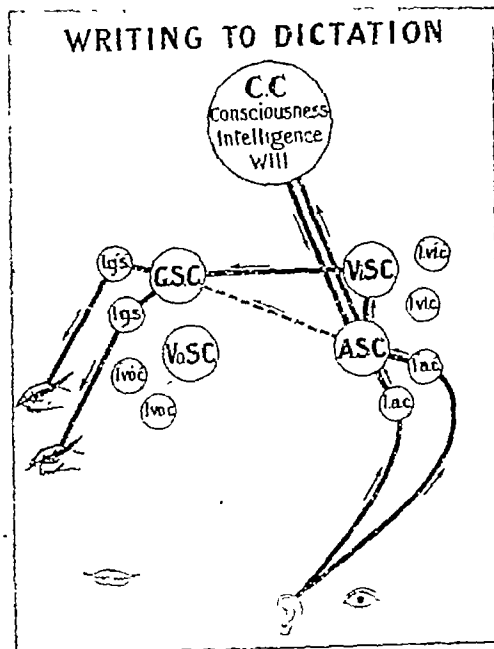
BROADBENT'S VIEW AS TO A NAMING OR IDEA CENTRE.

¹⁰ The uncertainty as to whether the original cell group in the sensory centre (say in the gustatory centre associated with the sensation of sweetness) must necessarily be (actively or passively) stimulated every time that the term "*sweet*" is subsequently aroused in consciousness is one which is constantly cropping up in connexion with some difficult questions with regard to the physiology and pathological physiology of the speech mechanism.

Broadbent supposes that in addition to the auditory speech centre there is situated in some part of the cerebral cortex another centre which he terms the "*naming*" or "*idea*" centre, in which the combination of the evidence respecting the idea of an external object received through

sensory channels. The child sees the object "dog," and his mother names the object "dog" or "bow-wow." When this procedure has been frequently repeated the child comes to associate the auditory speech symbol "dog" or "bow-wow" with the object "dog." And it must be remembered that not only is an intimate connexion formed in consciousness between these two sensory impressions, but—what is, I think, a very remarkable fact when we remember that it applies to the most intricate processes which take place in the marvellously intricate nervous mechanisms of the brain—an actual physical connexion—a nerve connexion is

FIG. 14.



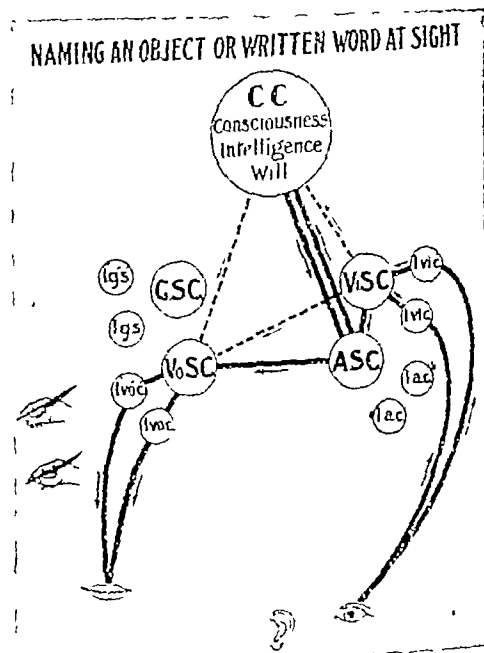
Diagrammatic representation of the course which the nervous impulses concerned in writing to dictation take. If the meaning of the words is understood the nervous impulses after reaching the auditory speech centre (A.S.C.) pass to the associated "Ideational" centres (C.C.); then from the "Ideational" centres back to the auditory speech centre; thence to the visual speech centre (V.S.C.) and from the visual speech centre to the graphic speech centre (G.S.C.) and out in the ordinary way through the lower graphic centres to the right hand. If the meaning of the words is not understood the nervous impulses may, after reaching the auditory speech centre, pass to the visual speech centre and thence out to the graphic speech centre, i.e., without passing to the "Ideational" centres (C.C.), or perhaps in some conditions of disease directly from the auditory speech centre (A.S.C.) to the graphic speech centre (G.S.C.), as is represented by the dotted line in the figure.

formed between the cell group in the higher auditory centre which represents the word "dog" or "bow-wow," and the cell group in the visual centre which receives and registers the image of the object "dog." After frequent repetition the connexion becomes so perfect, the connecting tracts so well worn, that whenever the child hears the sound (word) "dog" or "bow-wow" he looks about for, and fixes his eyes upon, the object—the dog; or, if the object is not present, he mentally pictures to himself (i.e., thinks of) the object—it raises up in the mind the memory or mental picture of the object "dog." In other words, the stimulus which is in this case primarily received by the cell group in the auditory centre which represents the sound (word) "dog" flows over from the auditory speech centre to the associated cell group in the visual centre and excites the visual memory of the object "dog." This is the basis of all intellectual operations—the association of ideas. So, too, whenever the child sees the object "dog" the stimulus flows over from the cell group in the visual centre, which receives it, to the associated cell group in the auditory speech centre in which the auditory speech symbol "dog" or "bow-wow" is represented; this cell group is in its turn stimulated and a memory of the word (name) "dog" or "bow-wow" is formed—the child thinks of the auditory speech symbol, the excited—the child thinks of the auditory speech symbol, the name "dog" or "bow-wow." The two centres (the visual

centre and the auditory speech centre) are in this way concurrently educated and taught to play one upon the other. By this process intimate connexions are formed between cell groups in these two great sensory centres (the visual and the higher auditory centres) and the names of various objects are taught and learned. In other words, the auditory speech symbols are not only brought into conscious relationship with the ideas which they symbolise and represent but the cell groups in the auditory speech centre in which the auditory speech symbols are received and registered are brought into anatomical and physiological relationship with the cell groups in the visual centre in which the visual impressions to which they correspond—i.e., which they symbolise—are received and registered.

The acquisition of attributes.—After a certain degree of education of the auditory speech centre, the visual centre, and the vocal speech centre (the centres concerned in the recognition of objects and movements (certain actions), in the comprehension and in the production of certain of the speech sounds (nouns and certain verbs expressive of certain actions) which represent the objects and visible movements which have been brought into organic cohesion and conscious association) has been acquired, information derived from the other sensory cerebral centres (the education of which has also been in process of development) is

FIG. 15.



Diagrammatic representation of the course which the nervous impulses concerned in the naming of an object or written word at sight take. In naming an object or written word at sight the nervous impulses pass from the eye to the lower visual centres and thence to the visual speech centre (V.S.C.), from which they pass to the auditory speech centre (A.S.C.), then, if they are understood, they pass to the associated "Ideational" centres (C.C.), from which they pass back to the auditory speech centre (A.S.C.) and thence out to the vocal speech centre (V.S.C.) in the ordinary manner (through the solid lines in the figure). If, however, the written word is not understood the impulses after reaching the visual speech centre (V.S.C.) pass directly to the auditory speech centre (A.S.C.) without passing to the associated "Ideational" centres (C.C.); or perhaps in certain circumstances directly from the visual speech centre (V.S.C.) to the vocal speech centre (V.S.C.), as is represented by the dotted lines in the figure. In naming an object (not a written word) at sight the nervous impulses after reaching the lower visual centres pass to a higher visual centre (not represented in the diagram), and from this higher visual centre they pass to the auditory speech centre (A.S.C.) and thence out in the ordinary way.

brought into the connexion and the child learns to associate certain qualities or attributes with the objects which he recognises by the eye and the names of which he has come to recognise by the ear. He is taught, for example, to associate such speech sounds (adjectives) as

"sweet" and "nice" with objects, such as sugar, which taste sweet and which he likes. In other words, the conscious impression which is generated in the cell group in the gustatory centre, which is stimulated by the application of the substance sugar to the end-organs of the nerves of taste, is brought into relationship with the cell group in the auditory centre which is stimulated by the sound (word) "sweet" or "nice." As the child's experience enlarges he comes to associate, and is taught to associate, the terms (words) "sweet" and "nice," not only with the taste of sugar, but with everything which he likes—say with "papa," "mama," &c. He also learns to form contrasts, to compare such substances as sugar and salt and such terms as *nice* and *nasty*. In this way, through the different senses and through the cerebral connexions which are formed between the different sensory centres, the child gradually learns (acquires) a large number of different attributes (adjectives), such as *sweet, bitter, nice, nasty, good, bad, soft, hard, rough, smooth*, and so on.

It is doubtful whether—when the attribute has acquired a sufficiently wide meaning—the stimulation of the cell group, say in the gustatory centre, in which the memory picture of the (sweet) taste of sugar was originally implanted and stored (which results from the overflow, so to speak, from the cell group in the auditory speech centre corresponding to the word "sweet"), is sufficiently powerful to excite a conscious sensation—i.e., a memory of a sweet taste. The connexion between the two cell groups in the auditory speech centre which represent the terms "sweet" and "sugar" must, of course, be much more powerful, for—although few persons, if any, feel a conscious gustatory sensation (taste) of sweetness when either the one or the other term (*sweet* or *sugar*) is thought of¹⁰—whenever we talk of "sweet" we are prone to (inclined to) think of sugar—the type of a sweet thing, the original thing with which we associated the sensation of sweetness, and *rice* *rené*.

When the word "*sweet*" calls up in the mind the memory of sugar the nervous process is probably as follows. The cell group in the auditory speech centre representing the word *sweet* is first stimulated; the stimulation then passes to the closely associated cell group in the auditory speech centre, the term or word sugar; and then if the ideas (gustatory, visual, &c.) which represent the thing sugar are called up in the mind the stimulation passes to distant cell groups in the gustatory, visual, and other cortical centres in which the ideas which go to form the complex mental picture or idea of (in this case) the thing sugar are represented and stored. In this way connexions may be formed between cell groups in the auditory speech centre and cell groups in the other sensory centres in the cerebral cortex. The child, for example, learns to associate with the auditory symbol or word percept "orange," certain visual appearances representing the form, size, shape, and colour of the orange, and certain gustatory, olfactory, tactile, and kinæsthetic impressions representing the taste, smell, feel, and weight of the orange. When this process is completed the raising up in the mind of the auditory speech symbol—in other words, the stimulation of the cell group in the auditory speech centre representing the word "orange"—raises up in the mind, or may raise up in the mind, all the attributes of the orange which the individual has by experience learned or acquired, the memory pictures of which have been stored (imprinted) in other parts of the cerebral cortex. In other words, there is an overflow from the cell group in the auditory speech centre which represents the auditory speech symbol or word percept "orange," through the connecting fibres, either directly or indirectly, to many different associated centres in the cerebral cortex; and the stimulation of the associated cell groups in these different centres is attended in consciousness with the revival of the memory pictures of the different qualities or attributes of an orange with which the individual has by previous experience become acquainted.

The process of learning to understand speech sounds (spoken words) seems to consist, so far as the physical side of the process is concerned, in the formation of connexions

between (a) the cell groups of the auditory speech centre, in which the word percepts are stored, and (b) the cell groups of the other centres of the cortex, in which the object and other percepts which represent the ideas which the word percepts (names) symbolise are stored. In the case of highly complex abstract ideas the process is necessarily much more elaborate than the simple process which I have just described. Further, it must be remembered that in the auditory speech centre itself connexions are formed between different cell groups representing the synonyms of different word percepts which in the experience of the individual represent the same idea or ideas. Taking the simple illustration, for example, which has been already given, there must obviously be in the auditory speech centre of the child two cell groups corresponding to the words "dog" and "bow-wow." Again, to give another example, the auditory word percepts "sweet," "nice," "agreeable," "pleasant," which symbolise or which may symbolise the same idea, must all have cell groups in the auditory speech centre which are in intimate anatomical and physiological (physical) connexion one with another. Again, the same speech sound may have entirely different meanings in accordance with the context (the other speech sounds with which it is associated), and the intonation which is given to the sound—witness, for example, the word "dam" in the sentences, "The *dam* in the river is, &c.," "*Damn* that boy," "The river was *dammed*," "Go and be *dammed*." These considerations clearly show that the auditory speech centre must be a very elaborate nervous mechanism.

According to the view which has just been stated, the memory or mental pictures of auditory speech symbols or names (word percepts) of objects, attributes, ideas, &c., are stored in the auditory speech centre, but the memory pictures of the ideas which these names represent are not raised in the mind by mere stimulation of the nervous mechanisms (cell groups) in the auditory speech centre, in which the memory pictures of the auditory speech symbols (words) are stored. The revival in consciousness of the memories of the ideas which the word percepts symbolise necessitates an overflow of nervous impulses to, and the stimulation of, the corresponding cell groups in the associated ("ideational") centres, which are situated in other, and it may be very distant, parts of the cerebral cortex. It, of course, does not necessarily follow, although this no doubt may be the case, when we hear the name "orange" and we afterwards think of the different attributes or qualities of an orange, that all of the nervous impulses pass *directly* from the cell group in the auditory speech centre, representing the word "orange," to the associated cell groups in the other (ideational) centres in which the memory pictures of the qualities or attributes of the "orange" are stored. The process may be, and probably in most instances is, an indirect one. The word "orange" may raise up the visual picture (shape, size, colour) of an orange and the stimulus may next pass from the cell groups in the *visual* centre, in which these visual memory pictures of the orange are stored, say to the cell group in the gustatory centre in which the memory picture of the taste of the orange is stored; and from that centre to an associated cell group in the auditory speech centre in which the memory picture of the auditory speech symbol "sour" is stored, which will then be stimulated. Further, it is, of course, possible that the stimulus may pass from the cell group in the auditory speech centre in which the memory picture "orange" is stored to an associated cell group in the same centre—the auditory speech centre—in which the memory picture of the word "sour" is stored, provided the memory pictures (word percepts) of the terms orange and sour which are stored in these two cell groups have become sufficiently linked together in consciousness and that the nervous overflow may pass from the cell group in the auditory centre which represents the word *sour* to the cell group in the gustatory centre in which the memory picture of the (sour) taste of an orange is stored. The view which I have advocated with regard to the relationship of the auditory speech centre and the "ideational" centres is not accepted by all authorities.

BROADBENT'S VIEW AS TO A NAMING OR IDEA CENTRE.

Broadbent supposes that in addition to the auditory speech centre there is situated in some part of the cerebral cortex another centre which he terms the "*naming*" or "*idea*" centre, in which the combination of the evidence respecting the idea of an external object received through

¹⁰ The uncertainty as to whether the original cell group in the sensory centre (say in the gustatory centre associated with the sensation of sweetness) must necessarily be (actively or passively) stimulated every time that the term "sweet" is subsequently aroused in consciousness is one which is constantly cropping up in connexion with some difficult and pathological theologies of mental action; and the same difficulty recurs with regard to the physiology and pathological physiology of the speech mechanism.

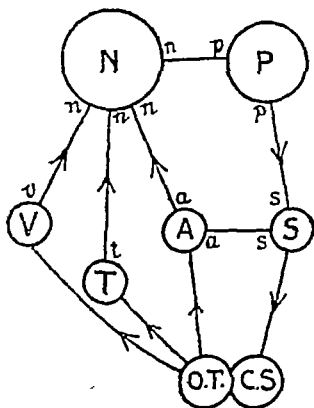
all the senses is brought into association with the name of the object. He says:—

There is a primary or rudimentary perceptive act in which the external cause of a given set of sensations is recognised as such and in which the simple attributes, as of form, colour, hardness, &c., are perceived. And there is a higher degree of elaboration in which, by the combination or fusion of perceptions derived from the various organs of sense, a conception or an idea of an object as a whole is obtained. This is a new and distinct process and is usually accompanied by the affixing of a name to the object. To the "perceptive centres" I relegate simply the translation of sensations into rudimentary or primary perceptions and these centres must lie somewhere in the marginal convolutions, which receive radiating fibres from the crus and central ganglia, upon which, therefore, impressions will first impinge and which are symmetrically combined by the fibres of the corpus callosum. The higher elaboration, the fusion of various perceptions together, and the evolution of an idea out of them, will be accomplished not by radiation of an impression from one perceptive centre to all the others but by convergence of impressions from the various perceptive centres upon a common intermediate cell area in which a process analogous to the translation of an impression into a sensation and of a sensation into a primary perception will take place. This intermediate cell area will form a part of the supreme centre and will be situated in the superadded convolutions which receive no radiating fibres.¹¹

And again:—

The formation of an idea of any external object is the combination of the evidence respecting it received through all the senses; for the employment of this idea in intellectual operations it must be associated with, and symbolised by, a name. The structural arrangement corresponding to this process I have supposed to consist in the convergence from all the "perceptive centres" of tracts of fibres to a convoluted area (not identified) which may be called the "Idea Centre" or "Naming Centre." This will be on the sensory, afferent, or upward side of the nervous system, its correlative motor centre will be the "Propositionalising Centre," in which names or nouns are set in a framework of other words for outward expression and in which a proposition is realised in consciousness or mentally rehearsed. If we are to have a seat of the faculty of languages, it would be here rather than in the third left frontal convolution, with which, however, it may possibly be in close proximity. Expressing this by a diagram (see Fig. 16) we have V, A, and T, the visual (angular gyrus, Ferrier),

FIG. 16.



Plan of "naming centre" (after Broadbent).

auditory (infra-marginal Sylvian gyrus), and tactile (uncinate gyrus), perceptive centres sending converging tracts of fibres, *v, n, a, n, t, n*, to N, the "naming centre." Here the perceptions from V and T (smell and taste are omitted for the sake of simplicity) are combined into an idea, which idea is symbolised by the word reaching N through A, which has always, in the experience of the individual, been associated with the object. P is the propositionalising centre in which the phrase is formed, its relations with N and S being sufficiently clear. It will no doubt be objected that there is no evidence of two centres, one for propositionising and the other employed by it for utterance; one for the construction and mental rehearsal of a phrase and the other for realising it in spoken words; and it is unquestionably true that, in a large proportion of cases of aphasia, both faculties are lost. The independence of the two operations seems to me, however, to be established by the following facts: *a*. There are cases in which the patient cannot frame the simplest phrase but can repeat anything said before him. Here S is intact, P destroyed. *b*. The converse of this—namely, that a proposition is realised in consciousness, so that not only the wish but the words are present to the mind, while the expression of them is impossible—is difficult to establish; but a comparison of cases of aphasia has led me to the conclusion that such is sometimes the case. If, however, there are really instances in which speech is lost while the power of writing is retained this would be conclusive. This will be considered later. This diagram (see Fig. 16) will perhaps bring out clearly what is, however, well recognised, the distinction between nouns or names and other parts of speech; the receptive centre, N, has to do only with names; as soon as other words are brought into use a motor function is exercised.¹²

This view seems to me to be quite unnecessary and much less probable than the one which I have advocated. Although it is conceivable that the nervous processes which are the physical substrata of the simple perceptions which represent a simple idea or a concrete thing (such as an orange) might be correlated and focussed together, as it were in a "naming centre," it seems to me very difficult to conceive that the highly complex nervous processes which constitute the physical (nervous) substrata of a highly complex abstract idea, such as the term "government" denotes, could be so focussed. Further, so far as I know, there are no facts to show that a localised lesion in any part of the brain other than the auditory speech centre is capable of completely obliterating the memories of names; in other words, clinico-pathological observations lend, so far as I know, no definite support to Broadbent's view.

In the *Journal of Nervous and Mental Disease* for January, 1895, O. K. Mills and J. W. McConnell reported a case which, they think, supports Broadbent's views and shows that the "naming centre" is situated in the inferior part of the left temporo-sphenoidal lobe. William Elder, in his book on Aphasia, quotes the case and agrees with the deductions which Mills draws from it. With this opinion I am quite unable to agree; the facts of the case do not, in my opinion, warrant the conclusions which the authors base upon them. The details of the case, which are of importance so far as the question of a "naming centre" is concerned, are as follow:—

A married woman, aged about 40 years, was first seen on July 18th, 1894. Two years before she came under observation she seems to have presented some symptoms of word blindness. On examination she was found to be word-blind but not letter-blind; there was apparently (the clinical details are very meagre) agraphia and there was right-sided homonymous hemianopsia. She was unable to name objects either from sight or touch, though she evidently understood what they were. She talked spontaneously but not freely, rarely using concrete nouns and sometimes misplacing words. She had some difficulty in repeating words but there does not appear to have been any word deafness. Six weeks before her death right-sided hemiplegia gradually developed. During the last weeks of her life "yes" and "no" were the only expressions used by her. She died on Sept. 10th, 1894.

Post-mortem examination.—A glommatous tumour was found in the lower part of the left temporo-sphenoidal lobe. "The parts chiefly destroyed were the white matter of the third, to a less extent of the second, and to a still less extent of the fourth temporal convolutions. Internally, the roof of the posterior horn of the lateral ventricle presented a slightly congested and granular appearance." The authors state that "the disease almost certainly started in the third temporal convolution, at a point with the posterior extremity of the horizontal branch of the Sylvian fissure."

Criticism.—I would suggest that the lesion must have been more extensive than the authors state. A destructive lesion limited to the lower part of the left temporo-sphenoidal lobe does not satisfactorily explain the symptoms which the case presented during life (word blindness, agraphia, right-sided homonymous hemianopsia, inability to name objects on sight and touch, and, ultimately, complete motor aphasia and right-sided hemiplegia), more especially when it is remembered that there was no word deafness and that the auditory speech centre was certainly not completely destroyed. The lesion did not involve the first temporal convolution; the second temporal convolution, which is probably a part of the auditory speech centre, was only partly destroyed.

The inability to name objects on sight and touch was probably, I think, due to interruption of the conducting fibres passing between the visual and tactile centres, on the one hand, and the auditory speech centre on the other. That the visual speech centre and the subjacent white fibres were involved seems to be conclusively proved by the facts that the patient was word-blind, agraphic, and affected with right-sided homonymous hemianopsia. Further, the history of the case seems to show that word blindness was present two years before the patient's death. I repeat that, in my opinion the case does not give any support to Broadbent's view; to my mind, it does not afford any proof either of the existence of a "naming centre" or of the position of that centre.

Again, according to Broadbent's theory, if I understand him rightly, destruction of the "naming" centre (N)—the auditory speech centre (A) being unaffected—will not only obliterate the idea, as a whole, which the name symbolises but will produce word deafness for names and will also render the patient unable to intelligently revive the memory pictures of names and spontaneously to make use of names for the purpose of intellectual speech. Now, if this is admitted, destruction of the "naming" or "idea" centre (N) should also destroy the patient's ability intelligently to make use.

¹¹ Transactions of the Royal Medical and Chirurgical Society, vol. xv, 1872, p. 181.

¹² Brain, vol. i., 1879, p. 494.

for the purposes of thought, of the memory pictures which are stored in the visual and tactual centres (V and T), for the centres V and T have, according to Broadbent, exactly the same relationship to the naming centre (N) which the auditory centre (A) has. Such a conclusion seems to be opposed to our knowledge of the working of the brain and of the relationship of speech and thought.

It is, of course, conceivable, if Broadbent's theory were correct, that destruction of the "naming" centre (N) would destroy the combined mental picture of an object—the idea of an object which is formed by the combination in the centre (N) of the primary memory pictures represented in the lower (primary perceptive) centres (A, V, and T). But even if this were so, if destruction of the naming centre (N) were to produce obliteration of the combined memory pictures—the ideas of objects as a whole—I see no reason why destruction of the naming centre (N) should also destroy and prevent the revival of the primary memory pictures stored in the auditory, visual, and tactual centres (A, V, and T); in other words, I see no reason why destruction of the naming centre (N)—the auditory centre (A) remaining unaffected—should render the patient unable to recall and make use of names for the purposes of speech.

It seems to me that the so-called "naming centre" is merely that part of the higher auditory centre (the auditory speech centre or its annexe, as Bastian terms it), in which an elaborate system of connexions is established between certain cell groups representing auditory speech impressions (word percepts) and other portions of the cerebral cortex in which cell groups representing the memory pictures or ideas which those word percepts represent are stored. This view is, I think, confirmed by the process of introspection. When we hear the name of an object, such as an "orange" we do not immediately perceive in consciousness all the attributes of that object; there is an obvious interval between the raising up in the mind of the different attributes (qualities or ideas which the word percept symbolises)—an obvious break or interval in the process of thought which it is reasonable to suppose corresponds to the overflow of the stimulus from one associated centre to another. So, too, when we are asked to express or define what we mean by an abstract idea, such as the term "Government," we cannot immediately express the complicated mental idea which the term involves as it seems to me we ought to be able to do if Broadbent's theory were correct—if the complex ideas which the term "Government" represents were focussed or gathered together in a special "naming" or "idea" centre—we have to take time, and often a long time, to think what the term means, to deliberate, to collect our thoughts before we can define and express what we mean by the term.

The chief argument which has been advanced by Broadbent in favour of the existence of a "naming centre" is the fact that in certain cases of aphasia the patient is absolutely unable to make use of names, whereas he retains the ability to make use of other parts of speech in which names, as Broadbent puts it, are set in a framework. But this argument does not seem to me to be at all conclusive. To my mind it merely proves either (1) that the memories of names are stored up in a special part of the auditory speech centre, while the memories of words other than names are stored up in some other part of the auditory speech centre; or (2) that the memories of words other than names may, perhaps, also be stored in some other centre, possibly in the kinesthetic or vocal speech centre (Broca's centre), as well as in the auditory speech centre. It is quite conceivable that the kinesthetic memories of the parts of speech other than names and attributes may in some cases be so firmly imprinted in the kinesthetic speech centre (i.e., ? Broca's centre or the vocal speech centre) that, after destruction of the auditory speech centre or the part of the auditory speech centre in which the memory pictures of names are stored, they can be independently revived in consciousness and made use of for the purposes of speech and thought.

Various other explanations may also be given. Possibly words other than names—i.e., the parts of speech in which names are set in a framework—which are frequently used are not only imprinted (stored up) in the left but also in the right auditory speech centre. While we must, from the observation of cases of auditory aphasia, suppose that in most persons memory pictures of the objects (nouns) are stored up (or chiefly stored up) in one (the left) auditory speech centre, it is not unreasonable to suppose that the

memory pictures of words representing attributes (adjectives) which are frequently used are bilaterally represented. In health, as everyone knows, it is very common to forget the name of a person; it is much less common to forget the name of a thing or of an action unless that thing or that action is a rare thing or a rare action; it is extremely difficult (almost impossible, I suppose, in health) to forget the name of an attribute (such as *mean* or *good*) which is frequently used and very generally applied; and it is probably still more difficult to forget the words (other than the names of things, actions, and attributes) which form the parts of speech in which names (of things, actions, and attributes) are set in a framework. Exactly the same defects are met with in disease. Names (other than one's own name or the names of one's immediate relatives or of striking personalities such as Bismarck or Gladstone) are first lost. But this does not, to my mind, in any way necessitate the supposition that there is a "naming centre" as distinct from the auditory speech centre. It only shows that the memories of terms and words which are least used are less firmly imprinted (perhaps only imprinted on one side of the brain) and are, therefore, most easily forgotten; whereas the memories of terms and words which are in more constant use are so firmly imprinted and the tracts which connect the cell groups in the auditory speech centre, representing such terms and words, with the associated sensory centre or centres in which are the visual, kinesthetic, or other memories of the objects which those terms or words represent, are so well worn and frequently used that such names and terms are readily recalled and are not easily forgotten.

Again, as Bastian has pointed out, differences in the severity of the lesion, whether it is merely a functional derangement or an organic destruction, will without doubt produce a different effect in the obliteration of the different word memories in accordance with the firmness, so to speak, with which those memories are imprinted or fixed in the cell groups of the auditory speech centre. A comparatively slight functional derangement, which has no effect upon a firmly fixed impression, may obliterate the memory picture of an impression which is less firmly fixed. Faint impressions and faintly fixed impressions tend in the course of time to disappear and the mental pictures which they represent to be forgotten. Faintly fixed impressions will *a fortiori* be easily blotted out either temporarily or permanently by pathological alterations or even physiological changes, such as exhaustion, which either temporarily impair, or permanently destroy, the functional activity of the cell and fibre mechanisms in which they are implanted. It must, however, I think, be admitted that a mere functional degradation of this kind does not satisfactorily account for cases such as Broadbent has described¹²—cases in which the patient is absolutely unable to make use of any name or noun but in which he retains the ability to make use of other parts of speech.

The view which I have just advocated regarding the relationship of the auditory speech centre to the process of thought was clearly expressed by Bastian so long ago as the year 1869 and it is adopted by most authorities. The following extracts from his work on aphasia are, in this connexion, of great importance. In speaking of Broadbent's naming centre he says¹¹:—

It seemed to me wholly unnecessary and at variance with what appeared to be the real nature of the process of perception. . . . Thus the work which Broadbent supposes to be done in his "naming" or "concept" centre is according to my view carried out by the simultaneous activity of the different perceptive centres and certain annexes that are derivative developments therefrom, of which I shall subsequently speak. Again, as I have previously endeavoured to show, perceptive processes vary greatly in complexity and merge by insensible gradations into processes of conception. It seems thoroughly legitimate, therefore, to suppose that these latter more specialised modes of mental activity, whilst having their roots in perceptive centres, may be completed in outgrowths therefrom—that is, in parts of the brain which are in close relation structurally and functionally with the several sensory centres. I have commonly spoken of such regions as "annexes" of the perceptive centres. . . . Those regions seem, therefore, to correspond with what I have referred to above as "annexes of the perceptive centres." They occupy a large proportion of the cerebral cortex and are thus described by Flechsig: (1) in parts of the frontal lobes; (2) in a large portion of the temporal lobes; (3) in a considerable area of the posterior parietal region; and (4) in the island of Reil. These four fairly well defined areas are, as above stated, not directly connected with afferent or with efferent fibres, and, in addition to this, two other regions are given for supporting them to be concerned with the carrying on of higher functions. Flechsig points out, in the first place, that these regions remain immature and completely

¹¹ Brain, vol. I, p. 422.
¹² Aphasia and Other Speech Defects, p. 42, et seq.

devoid of myelins for several months after birth, though the sensorial centres have arrived at comparative maturity; and, secondly, that these association centres are the parts which are especially developed in the brain of man as compared with that of the lower animals." Bastian then points out "that Broadbent had, twenty years previously, cited almost exactly these regions of the cerebral cortex as parts that were neither in direct relation with peduncular fibres nor with those of the corpus callosum and that he had attributed to these regions (for almost exactly similar reasons), just the same functions as those now assigned to them by Flechsig." He adds: "It is, I think, perfectly legitimate to suppose that the annexes of the sensory centres, to which I have previously referred, tend to be developed in the directions above indicated by Broadbent and Flechsig, though how much of these territories they occupy must remain altogether uncertain. It seems also probable that there is no sharp line of demarcation between these annexes and the several sensory areas and that the combined sensory areas, together with the annexes, are accustomed to be thrown into functional activity more or less simultaneously. Thus the processes of perception and conception, together with revival of linguistic symbols, are probably almost as inseparable in their localisation as they are in their nature and modes of occurrence; and their anatomical substrata must be supposed to occupy a very considerable extent of the cortex of both hemispheres." He quotes the late James Ross to the effect: "And on passing from thinking by percepts to thinking by concepts, and from that to thinking by abstracts, there are no new centres introduced, but only a complication upon complication of the one perceptive centre."¹⁵ All that can be said is that the correlative of perceptive thinking is excitation of that portion of the cortex of the brain which is directly connected with the sensory inlets; of conceptive thinking, excitation of portions of the cortex of the brain which are indirectly connected with them; and of abstract thinking, excitation of portions which are still more remotely connected with them. It must, however, be remembered that the effective working of the portions of the cortex which are remotely connected with the sensory inlets will in a great measure depend upon the integrity of those that are in direct relation with them."

In the construction of diagrams illustrative of the higher cerebral and speech mechanisms it is convenient for the sake of simplicity and illustration to introduce above the recognised perceptive or sensory speech centres (auditory speech centre and visual speech centre) and above the motor (or, as Bastian terms them, kinæsthetic) speech centres (vocal speech centre and graphic speech centre) two higher centres representing, on the sensory side, *Consciousness and Intelligence*, and, on the motor side, the *Will*, or one supreme centre representing *Consciousness, Intelligence*, and the *Will*, but it must be remembered that there is absolutely no reason to suppose that any such centres or centre exists as definite and distinct areas or centres in localised parts of the cerebral hemispheres; on the contrary, such a supposition seems to be altogether erroneous and in absolute contra-indication with our knowledge of the working of the brain and of the construction of the nervous mechanisms the integrity of which is essential for the manifestation of the psychical phenomena which we term *Consciousness, Intelligence*, and the *Will*.

All the different areas of the cerebral cortex and their connecting tracts are the physical substrata, the action of which is associated with the psychical or mental phenomena—*Consciousness, Intelligence*, and the *Will*. Each and every one of these cortical mechanisms (centres and associated tracts) forms a part of the physical substrata, the action of which is associated with the manifestation of the psychical phenomena—*Consciousness, Intelligence*, and the *Will*. The cortex as a whole is the seat of *Consciousness, Intelligence*, and the *Will*. Destruction of any one of the sensory or motor (? kinæsthetic) cortical centres necessarily obliterates the memory pictures which are stored up in that centre; the *Intelligence* is thereby the poorer, but in other respects it may remain the same, while *Consciousness* and the *Will* are, or may be, entirely unaffected. In such circumstances, the other mechanisms of the cerebral cortex may continue to play their part, though, in consequence of the loss (obliteration) of the memory pictures which were imprinted in, and the loss of the associations which can only be carried on through, the centre which is destroyed, certain of the faculties of the mind, as an intelligent, thinking, reasoning, and volitional mechanism, must necessarily be to some extent interfered with and impaired.

But while there are no localised centres for *Consciousness, Intelligence*, and the *Will*, and while I see no reason for supposing that there is, as Broadbent thinks, a special naming or idea centre and a special propositionising centre, in addition to the auditory speech centre (which I regard as the naming centre) and the vocal speech centre (which is possibly to some extent a centre in which the memories

of words other than names—the kinæsthetic memories—are stored), it does not, of course, follow that the various sensations and impressions which are primarily represented in the sensory (receptive) centres of the cerebral cortex and which are re-grouped in the higher auditory and visual centres (auditory, visual, and so on) may not be again re-grouped and brought into still more complex relationships in some still higher part of the cerebral cortex; and if this is so, one would naturally expect that the impressions which have been in this way re-arranged, re-grouped, and re-coordinated, as it were, would play (either directly or indirectly) upon the emissive, or, as they are usually termed, motor mechanisms and centres of the Rolandic area (ascending frontal convolution). In other words, it is probable that various sensations and impressions, for the conscious perception of which the sensory centres (auditory, visual, &c.), in the cerebral cortex would alone appear to be sufficient, may be re-grouped and brought into fresh combinations (co-ordination) in some higher and probably adjacent part of the cerebral cortex.

Hughlings Jackson believes that, in addition to the usually recognised motor and sensory centres of the cerebral cortex (which, he thinks, are the second tier of motor and sensory centres, the first or lower tier being in the pons Varolii, medulla oblongata, and spinal cord), there are higher motor and sensory centres. These highest motor centres are, he supposes, situated in the frontal lobes, while the highest sensory centres are, he thinks, situated behind Ferrier's sensory centres. Ferrier thinks such an arrangement unnecessary. But while there may be no sufficient reason for supposing that there are higher centres to which the terms *motor* and *sensory* (in the sense that I understand these terms) can be definitely applied, it is quite reasonable, I think, to suppose that there are higher centres in which the conscious impressions which have been registered and retained in the lower (ordinary) sensory centres of the cerebral cortex and which have been re-arranged and re-coordinated (in order that they may be brought into anatomical and physiological connexion with other and more distinct centres) in such centres as the auditory speech centre, the higher visual centre and their "annexes," may be again gathered together, as it were, re-arranged and co-ordinated in a still more complex and intricate manner. If these highest centres exist, they are perhaps situated in the prefrontal lobes, which are very generally regarded as being in a special sense the seat of the intelligence and of attention—as centres placed, as it were, above all the other centres and parts of the brain. Some such mechanism would appear necessary to form the physical substrata associated with the more complex mental processes of abstract thinking, deliberation, volitional attention, and the like; and this, I think, be allowed to be an argument in favour of the supposed existence of such highest centres. But when we grant that, we perhaps grant all. In the present position of our knowledge the question must necessarily be left an open one.

But even if such highest centres exist, they cannot, of course, be regarded as the exclusive seat of *Consciousness, Intelligence*, and the *Will*; they can only be regarded as the position in which the nervous mechanisms of lower sensory and motor centres (and their annexes) in the cerebral cortex are re-coordinated and re-combined and brought into relationship so as to facilitate the complex mental process of abstract thinking, deliberation, judgment, control, and the like.

THE PHYSICAL BASIS OF MEMORY.

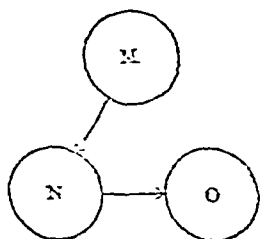
In this and the preceding lecture I have more than once spoken of mental pictures or memory pictures being stored in particular cell groups of the cerebral cortex. These statements are not, of course, strictly accurate. Mental pictures and memories are psychical phenomena; they consequently cannot be stored up in nerve cells; they—the psychical phenomena—occur in connexion with certain physical changes in the nerve cells of the cortex and although everything that we know of the working of the brain seems to show that the physical (nervous) changes are necessary and essential for the production of the psychical phenomena which attend and are developed coincidentally with the nervous (physical) changes, the one (the psychical) cannot be expressed in the terms of the other (the physical). The two sets of phenomena though concurrently manifested are, so far as our present knowledge enables us to judge, totally and radically different and distinct. Further, it must be remembered that, although the revival of a particular

¹⁵ It would be more correct, I think, to say that in passing from thinking by percepts to thinking by concepts and from that to thinking by abstracts the same centres are engaged and that there is merely a complication upon complication of the different perceptive centres and their annexes which are scattered through the cerebral cortex.

mental picture or idea necessitates the re-stimulation or re-excitation of exactly the same nerve elements, which were stimulated and excited when the mental picture or idea was originally (i.e., first) perceived in consciousness, and that a particular mental picture can only be revived as the result of the re-stimulation and re-excitation of those nerve elements and of *no others*, the mere re-stimulation and re-excitation of those nerve elements does not express the whole nervous change which corresponds to the revival in consciousness of the *memory* of that idea. In order that the re-excited image may be perceived in consciousness as a *memory*, consciousness must be aware of the fact that the idea has been perceived before; consequently a something more in the way of nerve change than the mere revival of the idea is obviously necessary. That this is so is proved by the fact that when the memory of an idea is completely lost the re-stimulation and re-excitation of the nervous elements (which form the anatomical and physiological substratum of that idea) merely excite and raise up in the mind the primary idea and not the memory of that idea. I see, for example, an object—say, a particular man; his is attended with the stimulation of a certain group of nerve cells in the visual centre. The fact that I have seen the individual fades from the mind, the memory is lost. But when the object is again presented to me—when I again see the same man—the same group of nerve cells is again stimulated; but the additional something in consciousness (the “*setting*” of the mental picture or idea, as W. James terms it) has been lost, the nerve change, whatever it is, which is attended with the development in consciousness of the *additional something* is not excited and I say I have never seen that man before. What this additional nerve change, which is attended with the consciousness of the fact that the mental picture or idea has been perceived before, is we do not (so far as I am aware) exactly know, but there seems every reason to believe that it must consist in an overflow from the cell group in which the original mental picture is stored to some associated cell group or cell groups, and the raising up in the mind, in consciousness, of a something which was (perhaps with the revival of the mental ideas which were) coincidentally aroused when the mental picture was originally perceived in consciousness.¹⁶

¹⁶ James puts it in the following terms: “Memory requires more than mere dating of a fact in the past. It must be dated in *its part*. In other words, I must think that I directly experienced its occurrence. It must have that ‘warmth and intimacy’ which were so often spoken of in the chapter on the Self as characterizing all experiences ‘appropriated’ by the thinker as his own. A general feeling of the past direction in time then, a particular date conceived as living along that direction, and defined by its name or phenomenal contents, an event imagined as located therein, and owned as part of my experience—such are the elements of every act of memory. It follows that what we began by calling the ‘image’ or ‘copy’ of the fact in the mind is really not there at all in that simple shape as a separate ‘idea.’ Or at least, if it be there as a separate idea, no memory will go with it. What memory goes with is, on the contrary, a very complex representation, that of the fact to be recalled plus its associates, the whole forming one ‘object,’ known in one integral pulse of consciousness, and demanding probably a vastly more intricate brain-process than that on which any simple sensorial image depends. A simple scheme (see Fig. 17) will now make the whole cause of memory plain. Let: n be a

FIG. 17.



part event: a life-setting (concomitant, date, and present, warmth and intimacy, &c., &c., as already set forth); and in some present thought or fact which may appropriately become the occasion of its recall. Let by M, N, and O respectively, then the existence of the paths M-N and N-O will be the fact indicated by the phrase ‘recollection of the event’ in the memory, and the connection of the brain along these paths will be the condition of the event as actual recall. The *re-stimulation* will be observed, as an external arising up of an ‘idea’ in its unconscious state. It is not a fact of the mental order at all. It is a purely physical phenomenon, a morphological feature, the presence of

Lecture

ON

THE ETHICS OF THE MEDICAL PROFESSION IN RELATION TO SYPHILIS AND GONORRHOEA.

Delivered before the Harreian Society on Feb. 8th, 1906.

By CAMPBELL WILLIAMS, F.R.C.S. Eng.

GENTLEMEN,—It has always appeared to me to be more than passing strange that the laws of our country whilst making it incumbent upon the medical profession to notify the public health authorities of the existence, and consequently the likelihood of propagation, of certain duly specified diseases, either of a contagious or infectious nature, have nevertheless apparently deemed it unnecessary, or perchance impolitic, to include that health-ruining and race-deteriorating malady syphilis within their schedule. One can better understand the omission of gonorrhoea from the catalogue, since the average lay mind fails to grasp the gravity of its possibilities and fallaciously relegates it to the domains of trivial complaints.

There is probably no medical man who has not on many occasions been brought face to face with patients of both sexes suffering from one of the many disastrous results to which the intruding and aggressive gonococcus may give rise—effects which may not only ruin happiness and health for good and all but maybe lead to death. With syphilis, however, one would think that the plea of ignorance as to its baneful capabilities could never have been a factor which influenced its exclusion from any list of public dangers. One must rather attribute its omission to that false sense of modesty which pervades the average British mind and prevents public reference or consideration of any disease in connexion with the “to silence sacred” genital organs. It would seem that though we are cognisant of an existing and ubiquitous danger we nevertheless prefer, through lack of moral courage, to close the legislative eye and to remain sanitariously dumb upon a subject and condition of affairs which is medically admitted to be one that demands the State’s most urgent attention. The position of any medical man, and more particularly the family medical adviser, when he has learned of the existence of gonorrhoea or active syphilis in one member of a married couple is under the present régime, which imposes the toils of quasi-father confessorship upon us, not a particularly enviable one. For though fully recognising the possible—nay, even probable—danger of propagation, one is in many instances closely restricted to giving the patient a solemn warning as to the intense contagiousness of the disease and to dilating upon the certainty of its dissemination should our admonition, as it too often is, be disregarded. We are, so to speak, tongue-tied and have, through professionally enforced silence, to rely against further propagation of infection upon the dictates of a conscience which has already proved itself unworthy of trust. If this were not so we could often be in time, by calling a spade a spade, to safeguard the innocent against contagion and the misdeed of adultery, culminating in gonorrhoea or syphilis, would not have to be temporarily screened by those whose duty it should be to preserve health. I have no doubt that the cost of this quarantine, which is denied us, would be either a voluntary or judicial separation, but perchance with a woman’s health preserved. For in the large bulk of cases of domestic venereal disorders it is the man who propagates disease through having consorted with some infectious prostitute. It may be that some wives would not agree with me when I say that were I but a woman I should consider freedom from syphilis or Fallopian tube mischief to be cheap even

these ‘paths,’ namely, in the direct recesses of the brain’s tissue. The recall or recollection, on the other hand, is a psychophysical phenomenon, with both a bodily and a mental side. The bodily side is the functional excitement of the tracts and paths in question; the mental side is the conscious vision of the past occurrence and the belief that we experienced it before.” (The Principles of Psychology, vol. I, pp. 650, 651, and 652.)

at the price of marital separation and to be infinitely preferable to impaired health and possibly subsequent divorce proceedings on the grounds of "adultery and legal cruelty." But the restraint which our cloth imposes upon us, that secrecy and confidential relationship which exists between medical man and patient, not only ties the mouth but compels us, until the law wills otherwise, to confine our well-meant timely warning, so pregnant with danger to an innocent and unsuspecting woman, to some fairy tale or else cryptic hints which as often as not fall upon the wifely ear as empty meaningless words. It has always seemed to me to be somewhat of a paradox that whilst one may unhesitatingly appraise a man's wife of the existence of some trifling exanthem within her home and against which she may be immune, we are nevertheless in certain instances bound to exercise an almost criminal reticence towards her—a conspiracy of silence as it were—when dealing with venereal diseases which in all probability may gravely concern her future health and welfare. It is needless for me to point out that when infection has, or probably has, been effected one could serve no good purpose by enlightening an unsuspecting wife as to the true nature or cause of the illness from which she is suffering. Moreover, she would probably not understand the bald mention of such diseases as syphilis or gonorrhoea. It would require a full and lucid explanation to make her realise the contingencies necessary for their contraction and dissemination. In such a case ignorance is bliss, more particularly when she perchance idolises her husband and regards him as an impervious monument of morality. Any awakening as to marital deception would do no good but only add unhappiness to ill-health.

Let us now consider the somewhat awkward position of a practitioner who has been called in to see some ailing servant, such as a parlour-maid, cook, or even nursemaid who bathes, clothes, and feeds the children of the house, perchance putting the very spoon with which they eat into her mouth. He may find the patient, as I have done, to be rampantly syphilitic or else gonorrhoeally infected, exuding drachms of most contagious pus daily, and consequently a possible danger to every other member of the household. In such cases there can be, in my opinion, no alternative judgment or course. The patient must leave her situation at once, either voluntarily or, if needs be, through pressure or even exposure. Perhaps there may be some sticklers of ethics who would not agree with me as to the permissibility of disclosure, even in such a flagrant case, should such a drastic course become actually necessary to make her go. But I feel convinced that most people would more than thank me for my breach of faith on behalf of their safety. The more perplexing cases as to what is the right thing to do are those in which an element of doubt is present. The patient is suffering from a hitherto unknown *anæmia* and lassitude and complains of being feverish towards and during night-time, but which symptom has left her, so she says, when she wakes in the morning. You know that she has recently been immoral, because she has confessed as much to you, and consequently you may think of syphilis as a possible cause for these symptoms. An examination, if such be permitted, reveals no unimpeachable signs of the malady and though you may shrewdly suspect the disease to be the "*fons et origo mali*" you are for the time being uncertain as to its presence or not. I think we would all agree that you could not inform her mistress of the immorality—a fact which you have gleaned as it were under the seal of confession—and you could not hint about the doubts which fill your mind as to the possible nature of the disease without thereby disclosing the exciting cause thereof. In one hand you hold the patient's confidence and in the other the safety maybe of a third person, and you are bound to respect both. Well, I am afraid that all which one can do is to wait and watch, taking upon your own shoulders any and all risks which your professional silence engenders. Fortunately for us, cases of infection in this wise—that is, mediate communication—are comparatively rare. But they do occur from time to time, as many of us have experienced. Of course, in the case of a vaginal discharge any element of doubt as to its gonorrhoeal or leucorrhoeal nature can be quickly dissipated by microscopical examination. This should never be neglected, since acute or even subacute leucorrhoea so often mimics many of the classical symptoms of its venereally contracted and ophthalmically dangerous prototype. With suspected syphilis, however, I do not think that the microscopical discovery of a spirochæta in the

blood would make most of us unhesitatingly plump for the existence of that disease, in the absence of all outward and visible signs of the malady, other than the prodromal symptoms. Personally, in such a case I should feel inclined to throw the odium of a possibly incorrect diagnosis on a professional pathologist, or, at least, until we have more unequivocal proof that the presence of the spirochæta is "the cause" of the syphilitic phenomena, though I must say that I think Schaudinn and Hoffmann are right and that they have discovered the organism. Possibly the spirochæta pallida may open up a new line of treatment.

In consulting practice one's patients are frequently, if I may use the term, but perambulating units of suffering humanity. One neither knows who they are or whence they come, and once they have re-crossed the threshold of your doorstep they go forth to mix amongst their fellow creatures free from all restraint excepting such as your warning and the dictates of their own conscience may impose upon them, both of which influences are but slender reeds which either the swish or rustle of a passing petticoat may swiftly bow to earth and thereby perpetuate the cycle of disease. There is a good old saying that "half a loaf is better than no bread." So if the State cannot, for politico reasons, make the notification of the diseases in question applicable to society at large it might at least take steps to enforce restraint upon that abandoned element of the population which gains its livelihood through vice. The prostitute is undoubtedly the fountain head for the propagation of these diseases. I take it that if one wishes completely to rid a view of an unsightly tree, or a field of some rank evil-spreading weed, the quickest way to attain that end is not to lop off branches here and there but to try to uproot it in its entirety. But what is the position or attitude of the medical profession in this matter? It is simply one of helplessness, if not carelessness. One may see a prostitute plying for hire, either in the streets or else in some place of amusement whom only a few hours ago you have examined and found to be syphilitic, and who, notwithstanding all your warnings which have scarcely had time to grow cold, cannot, under our present laws, be restrained from infecting the community. This seething mass of syphilis is absolutely free to do as she lists. If any medical man doubts the accuracy of this statement, which I make through many years' experience at the Lock Hospital, I would advise him to apply for permission to attend the female out-patient department of such an institution and on that selfsame night to go out either into the highways or else to some place of amusement which this class of women frequent, and put his memory of faces to the test. I feel more than convinced that an extra strong wave of morality would sweep over him, and that he would thereafter see the position of affairs from the sanitary point of view to which I wish to draw your attention. No amount of legislation other than the drastically lethal method employed by certain native races will make a nation or people as a whole moral and since we cannot attain that most desirable end surely the next best thing to do is to make some earnest endeavour to preserve the community's health. I think it is a pretty well recognised fact that many people contract venereal disease not through erring with malice aforethought but through being waylaid by some perambulating prostitute who happens to accost them in a weak moment when alcohol has capsize their better judgment and made them cast all thought of consequences, assuming that they ever knew of the existence of such, to the four winds of heaven. Many a married workman with his week's wages in his pocket and a little Saturday afternoon drink within his stomach would have reached his home and wife safely and undiseased if our streets were but free from such limpet-like pests. Nor would the silly youth who happens to have taken more wine than his weak head and erotic centres would stand be lured for the first time in his life to whoredom and disease through accidentally meeting some importuning and infectious harpy. Many of these boys—for they are little better than that—even if they chanced to know the whereabouts of a brothel would, through never having been to one before, lack sufficient courage to go there but would reach home possibly sick at stomach but otherwise sound in body and health.

Now here are we medical men, who as a party should be some 30,000 strong, content as it were with this attitude of *laissez faire*. A few individuals here and there may raise the voice of protest but as a body corporate, thousands of whose unsuspecting fingers have been syphilitically infected in the discharge of their professic

discreetly dumb, at least negligently silent upon this urgent matter, allowing our knowledge and experience to be overruled and stultified by the judgment of certain people who are totally unqualified by aught than fanaticism to express an opinion on such a momentous matter—a subject of which they have neither medical knowledge nor practical experience. There is a certain section of this class who, either from a strong religious or extra-moral sense of duty, hold that any preventive measure which might confer a degree or element of safety upon vice is consequently wrong. They fallaciously seem to think, though their thoughts are contrary to the weighty evidence of facts, that the terror of contracting disease will act as a deterrent to fornication and that fear is either conducive to, or will generate, morality in a nation. Their dictum would appear to be allied to that Gilbertian one which holds that the "punishment should fit the crime," apparently oblivious or heedless of the fact that the innocent too frequently share the penalty with the guilty and oft-times endure the bulk of it. To my mind there is no reason why the sins of the fathers should be visited upon the wives, much less the children. We could and should stop both to a very large degree. I have often wondered if some of these hysterical and narrow-minded champions of "morality at any price" were to become accidentally infected whether they would subsequently hold their same intolerant views or if they would not, even more than ordinary people, resent the supineness of our laws which permit the uncontrolled transmission of those diseases which they themselves strive so hard to perpetuate. My experience of this class is that they regard the safety of their own skins from a very different standpoint to that from which they view other people's and are amongst the loudest with their shrieks should danger draw unpleasantly near themselves. We as medical men, even though we do not express our views with the vehemence of an Exeter Hall orator, may perchance realise, just as clearly as the laity, clergy, or even elderly spinsters, that immorality is neither good for the individual nor for the community at large. But as men of the world we are broad-minded enough to recognise the patent fact that no effort on our part will alter human nature as it is and as it ever seems likely to be. *Naturam furcæ expellas tamen usque recurret.* For natural passions always have found, and always will continue somehow to find, their vent, and no amount of preaching on our or anybody else's part will alter the trend of humanity.

The present-day cost of maintaining a wife is more than frequently a financial bar to many a young man who would otherwise seek and find sanitary salvation in matrimony. But as want of means denies him this luxury it too often happens that his natural erotic tendencies lead him within that zone of dangers which ever beset indiscriminate intercourse, even if they do not cast him upon the lurking rocks of syphilis or gonorrhoea. Everybody is not built with a stable nervous organisation or with a strong will-power. Nor is the trend of their heritage calculated to enhance the spontaneous growth of a morality the principles of which have never been properly inculcated within the childish or youthful breast by parental tuition, advice, or example. With many people immorality deserves pity rather than blame in that it is a symptom of inherited psychical degeneration just as much as dipsomania, crankishness, and any blatant anti-socialism which often are but other phases by which ancestral neuroses declare themselves. The narrow borderline between genius and insanity not infrequently expresses its existence by either an irresistible or else a perverted erotism. Some people are moral, I might say truly moral, purely from their parental training and upbringing which have developed within them a higher sense of right and wrong. Others inherit morality through that pure accident of birth which finds them, through either an arrested development of the cerebral sexual centres or from a faulty growth of the genital apparatus, with an almost total absence of sexual instinct or desire. This piece of luck, if such it be, endows them with an unearned and ready-made cloak of righteousness which they seem to love to flaunt as an example to the weaker members of the community. To them immorality, and not morality, would be the effort. A few of those who pose as moral towards the female sex owe the attainment of their power for celibacy, as they have confessed to me, to self-engendered conditions which would hardly meet with approval, nor could the practice by which their revelation or impotence is gained be recommended as a panacea or substitute for sexual

intercourse. In fact, I question whether the secret and vicious cause for their ostensible morality is not a greater evil to body and mind than fornication itself. In my experience it is often much more difficult to rehabilitate lost manhood, or to relieve some of its more distressing symptoms than it is to cure an average case of syphilis. Many of these poor weak-minded wights in their secret endeavours to assuage nature and to avoid disease have wrecked their lives and health just as badly as the infected and fornicating impotent libertine. It is not any of these types of moralist who require our protection against venereal disease, in that they, after their own particular fashion, protect themselves; it is rather the medical profession which requires shielding from their well-meant but misguided efforts which have done so much to counteract all our attempts towards restricting disease.

I must now bring this plain-speaking paper to an end and I would ask your kind consideration and opinion upon the following controversial points. Shall we knowingly and wittingly permit diseases which we could, and in my opinion should, check from exercising their baneful results without any effort on our part to restrain their dissemination? Or should we as a profession awake from our lethargy and by showing a united front make some endeavour to arrest their spread and ravages. Moreover, are we justified in certain cases in relaxing our attitude of professional secrecy and reticence when we have good reason for believing that our sphinx-like demeanour will probably result in some innocent person being infected; or shall we, like Nero whilst Rome blazed, be callous of a woman's health which may perchance, through our silence, be scathed or even burned to cinders of its former self? I take it that in this game of Human Bridge, of which the stakes are health, we as a profession not only hold four aces and all the leading cards but likewise have the "call."

SOME OBSERVATIONS UPON THE ETIOLOGY OF OBLIQUE INGUINAL HERNIA.

BY R. W. MURRAY, F.R.C.S. ENG.,

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THAT there should be some considerable doubt as to the etiology of such a common complaint as inguinal hernia does not reflect much credit upon the medical profession, and I trust, in view of the numerous contributions to the literature of this subject by many illustrious surgeons, that the following remarks of an obscure provincial surgeon who certainly lays no claim to originality may not be considered an impertinence.

Though the presence of an inguinal hernia must be due to some weakness of the structures which form the opening through which the abdominal contents escape, the question yet to be answered is, What are the chief factors which constitute this weakness and so determine the descent of the bowel? It is, I believe, generally admitted that in the great majority of such herniæ which occur during infancy the local weakness is due to the presence of a pre-formed sac, an unobliterated portion of the processus vaginalis testis. In the ordinary hernia of adult life, however, the local weakness is not as a rule considered to be due to any such congenital defect but to be confined to the muscular and aponeurotic structures of the abdominal wall which permit of the escape of the bowel by pushing the parietal peritoneum in front of it. This division of herniæ into "congenital" and "acquired" has of recent years been severely criticised, more especially by Mr. R. Hamilton Russell of Melbourne who adduces evidence in favour of the belief that the presence of a pre-formed sac is the main factor in the causation of hernia during all periods of life.

Before offering any theoretical explanations concerning the conditions which predispose to the formation of a hernia it will be well to reconsider certain ascertained facts. It is only by dealing with a large number of cases that one is able to learn not only what is the usual type of hernia but also the different periods of life at which hernia most commonly occurs. Thanks to the labours of Mr. J. F. C. H. Macready, we have in his classical work, "A Treatise on Ruptures," these necessary facts before us. Mr. Macready's table of statistics comprises 20,999 cases of hernia occurring in

at the price of marital separation and to be infinitely preferable to impaired health and possibly subsequent divorce proceedings on the grounds of "adultery and legal cruelty." But the restraint which our cloth imposes upon us, that secrecy and confidential relationship which exists between medical man and patient, not only ties the mouth but compels us, until the law wills otherwise, to confine our well-meant timely warning, so pregnant with danger to an innocent and unsuspecting woman, to some fairy tale or else cryptic hints which as often as not fall upon the wifely ear as empty meaningless words. It has always seemed to me to be somewhat of a paradox that whilst one may unhesitatingly apprise a man's wife of the existence of some trifling exanthem within her home and against which she may be immune, we are nevertheless in certain instances bound to exercise an almost criminal reticence towards her—a conspiracy of silence as it were—when dealing with venereal diseases which in all probability may gravely concern her future health and welfare. It is needless for me to point out that when infection has, or probably has, been effected one could serve no good purpose by enlightening an unsuspecting wife as to the true nature or cause of the illness from which she is suffering. Moreover, she would probably not understand the bald mention of such diseases as syphilis or gonorrhoea. It would require a full and lucid explanation to make her realise the contingencies necessary for their contraction and dissemination. In such a case ignorance is bliss, more particularly when she perchance idolises her husband and regards him as an impervious monument of morality. Any awakening as to marital deception would do no good but only add unhappiness to ill-health.

Let us now consider the somewhat awkward position of a practitioner who has been called in to see some ailing servant, such as a parlour-maid, cook, or even nursemaid who bathes, clothes, and feeds the children of the house, perchance putting the very spoon with which they eat into her mouth. He may find the patient, as I have done, to be rampantly syphilitic or else gonorrhoeally infected, exuding drachms of most contagious pus daily, and consequently a possible danger to every other member of the household. In such cases there can be, in my opinion, no alternative judgment or course. The patient must leave her situation at once, either voluntarily or, if needs be, through pressure or even exposure. Perhaps there may be some sticklers of ethics who would not agree with me as to the permissibility of disclosure, even in such a flagrant case, should such a drastic course become actually necessary to make her go. But I feel convinced that most people would more than thank me for my breach of faith on behalf of their safety. The more perplexing cases as to what is the right thing to do are those in which an element of doubt is present. The patient is suffering from a hitherto unknown anaemia and lassitude and complains of being feverish towards and during night-time, but which symptom has left her, so she says, when she wakes in the morning. You know that she has recently been immoral, because she has confessed as much to you, and consequently you may think of syphilis as a possible cause for these symptoms. An examination, if such be permitted, reveals no unimpeachable signs of the malady and though you may shrewdly suspect the disease to be the "fons et origo mali" you are for the time being uncertain as to its presence or not. I think we would all agree that you could not inform her mistress of the immorality—a fact which you have gleaned as it were under the seal of confession—and you could not hint about the doubts which fill your mind as to the possible nature of the disease without thereby disclosing the exciting cause thereof. In one hand you hold the patient's confidence and in the other the safety maybe of a third person, and you are bound to respect both. Well, I am afraid that all which one can do is to wait and watch, taking upon your own shoulders any and all risks which your professional silence engenders. Fortunate for us, cases of infection in this wise—that is, mediate communication—are comparatively rare. But they do occur from time to time, as many of us have experienced. Of course, in the case of a vaginal discharge any element of doubt as to its gonorrhoeal or leucorrhoeal nature can be quickly dissipated by microscopical examination. This should never be neglected, since acute or even subacute leucorrhoea so often mimics many of the classical symptoms of its venereally contracted and ophthalmically dangerous prototype. With suspected syphilis, however, I do not think that the microscopical discovery of a spirochæta in the

blood would make most of us unhesitatingly plump for the existence of that disease, in the absence of all outward and visible signs of the malady, other than the prodromal symptoms. Personally, in such a case I should feel inclined to throw the odium of a possibly incorrect diagnosis on a professional pathologist, or, at least, until we have more unequivocal proof that the presence of the spirochæta is "the cause" of the syphilitic phenomena, though I must say that I think Schaudinn and Hoffmann are right and that they have discovered the organism. Possibly the spirochæta pallida may open up a new line of treatment.

In consulting practice one's patients are frequently, if I may use the term, but perambulating units of suffering humanity. One neither knows who they are or whence they come, and once they have re-crossed the threshold of your doorstep they go forth to mix amongst their fellow creatures free from all restraint excepting such as your warning and the dictates of their own conscience may impose upon them, both of which influences are but slender reeds which either the swish or rustle of a passing petticoat may swiftly bow to earth and thereby perpetuate the cycle of disease. There is a good old saying that "half a loaf is better than no bread." So if the State cannot, for politic reasons, make the notification of the diseases in question applicable to society at large it might at least take steps to enforce restraint upon that abandoned element of the population which gains its livelihood through vice. The prostitute is undoubtedly the fountain head for the propagation of these diseases. I take it that if one wishes completely to rid a view of an unsightly tree, or a field of some rank evil-spreading weed, the quickest way to attain that end is not to lop off branches here and there but to try to uproot it in its entirety. But what is the position or attitude of the medical profession in this matter? It is simply one of helplessness, if not carelessness. One may see a prostitute plying for hire, either in the streets or else in some place of amusement whom only a few hours ago you have examined and found to be syphilitic, and who, notwithstanding all your warnings which have scarcely had time to grow cold, cannot, under our present laws, be restrained from infecting the community. This seething mass of syphilis is absolutely free to do as she lists. If any medical man doubts the accuracy of this statement, which I make through many years' experience at the Lock Hospital, I would advise him to apply for permission to attend the female out-patient department of such an institution and on that selfsame night to go out either into the highways or else to some place of amusement which this class of women frequent, and put his memory of faces to the test. I feel more than convinced that an extra strong wave of morality would sweep over him, and that he would thereafter see the position of affairs from the sanitary point of view to which I wish to draw your attention. No amount of legislation other than the drastically lethal method employed by certain native races will make a nation or people as a whole moral and since we cannot attain that most desirable end surely the next best thing to do is to make some earnest endeavour to preserve the community's health. I think it is a pretty well recognised fact that many people contract venereal disease not through erring with malice aforethought but through being waylaid by some perambulating prostitute who happens to accost them in a weak moment when alcohol has capsized their better judgment and made them cast all thought of consequences, assuming that they ever knew of the existence of such, to the four winds of heaven. Many a married workman with his week's wages in his pocket and a little Saturday afternoon drink within his stomach would have reached his home and wife safely and undiseased if our streets were but free from such limpet-like pests. Nor would the silly youth who happens to have taken more wine than his weak head and erotic centres would stand be lured for the first time in his life to whoredom and disease through accidentally meeting some importuning and infectious harpy. Many of these boys—for they are little better than that—even if they chanced to know the whereabouts of a brothel would, through never having been to one before, lack sufficient courage to go there but would reach home possibly sick at stomach but otherwise sound in body and health.

Now here are we medical men, who as a party should be some 30,000 strong, content as it were with this attitude of *laissez faire*. A few individuals here and there may raise the voice of protest but as a body corporate, thousands of whose unsuspecting fingers have been syphilitically infected in the discharge of their professional duties, we remain, if not

other hand, the opening is large and the inguinal sphincter weak, the probabilities of a hernia occurring are considerable. The frequent occurrence of inguinal hernia in infants would thus be explained.

The frequency with which hernia first appears about the age of puberty I would explain by the increased amount of exercise usually indulged in at this period, and so the muscles which under ordinary conditions are able safely to guard a patent internal opening are suddenly overtaxed and the bowel escapes. This will, of course, largely depend upon the size of the internal opening. In the case of a hernia appearing later in life the same reasoning would hold good. Though the processus vaginalis has been to some extent patent since birth, no hernia has appeared, for the internal opening was never large and the sphincter was well able to guard it, but with declining years and weakened muscles the sphincter at some critical moment fails and the bowel or omentum passes through. Hernia not infrequently makes its first appearance during convalescence from a long illness. Under these conditions it appears to me more reasonable to explain such an occurrence in the way I have endeavoured to rather than to suppose such a hernia to have been acquired.

If this explanation of the etiology of hernia is correct it clearly has some important bearing upon our methods of curing it, for our chief objects in operating should be completely to do away with any semblance of an internal opening or depression and at the same time to preserve the inguinal sphincter intact. Other things being equal, the operation should be performed very early in life so as to make sure that the funicular process is really closed and also to prevent subsequent weakening of the muscles guarding the opening from the descent of the bowel constantly stretching them.

Note.—Since writing this paper I have obtained some most interesting and valuable information, owing to the courtesy of my friend, Dr. Nathan Raw, physician to the Mill-road Infirmary, Liverpool, and the kind interest taken in the matter by Dr. R. A. Macleod, Dr. B. G. Wills, and Dr. Arthur Hendry, the resident medical officers. In 100 consecutive and in no way selected post-mortem examinations made at the Mill-road Infirmary, Liverpool, upon persons in whom during life there was no history or evidence of hernia, a potential hernia sac was discovered in the following 21 cases. The number of cases examined was 100—61 males and 39 females.

No. of case.	Age (Years).	Sex.	Potential hernia sac.
1	43	Male.	Double inguinal and right femoral.
2	61	"	Double inguinal.
3	45	"	Left femoral.
4	57	"	Right femoral.
5	39	"	Right inguinal (contained piece of omentum).
6	55	"	Left inguinal (contained piece of omentum).
7	42	"	Left femoral.
8	29	"	Right femoral.
9	44	"	Double inguinal and double femoral.
10	30	"	Right and left femoral.
11	63	"	"
12	62	"	Right femoral.
13	32	"	Left inguinal.
14	40	Female.	Right femoral.
15	14	"	Right and left femoral.
16	62	"	Left femoral.
17	54	"	Right femoral.
18	32	"	"
19	60	"	Right and left femoral.
20	47	"	Left femoral (contained piece of omentum).
21	56	"	Umbilical (contained piece of omentum).

In most of the cases the unobliterated portion of the processus vaginalis testis was about one inch in length and the opening at the internal abdominal ring was so narrow as barely to admit a large probe. In others the opening was sufficiently large to admit the little finger, and in three of

the cases the sac contained a small piece of omentum, which was not adherent and was readily withdrawn. In seven instances more than one sac was found and in Case 9 it will be noticed that an inguinal and a femoral sac existed on either side. In no case was an obturator or sciatic sac present.

Though the number of cases here dealt with is far too small to furnish any accurate information respecting the relative frequency with which a potential hernia sac may occur among persons in whom during life there is no evidence of a hernia (the proportion in this series being probably exceptionally high) still these cases certainly go a long way, if not the whole way, to prove the truth of Mr. Hamilton Russell's contention, that in all ordinary inguinal and femoral hernias the sac is pre-formed and of congenital origin.

Liverpool.

FATAL RUPTURE OF A PYOSALPINX DURING LABOUR.

By J. W. ROB, M.D. CANTAB.

THE following case is interesting in more ways than one. It is not often that an undiagnosed pyosalpinx ruptures during labour. The symptoms manifested were not those usually presented by cases of ruptured pyosalpinx. And the case shows how a medical man may, through no fault of his own, be involved in troublesome and painful circumstances against which he could not possibly have guarded.

On Wednesday, Dec. 6th, at 8.30 P.M. I was called to a woman in labour. My partner had died only two days previously and he had promised to attend the case. The woman, whom I saw for the first time that evening, was apparently strong and healthy. She had been married ten months. A monthly nurse was in attendance. I was told that labour began on Monday morning about 5 A.M. and that the membranes ruptured about noon the same day. Pains had been strong and frequent on Tuesday and nothing abnormal had been noticed. Nourishment was taken well on Monday and Tuesday. The woman had no sleep on Tuesday night. The nurse said that she had not sent for me before because she knew that the first labour was often a long one. At 8.45 P.M. on Wednesday the woman was pale and exhausted; her temperature was 98° F. and her pulse was 120 per minute. The presentation was left occipito-anterior and the head was engaged in the brim of the pelvis. The os was fully dilated. Between 8.45 and 9.30 P.M. there were four or five feeble pains which had no effect in moving the head so I sent for assistance and, chloroform having been given, delivered a healthy male child with forceps without any more trouble than a slight rupture of the perineum which was sewn up at once. Previously to the administration of chloroform the abdomen was quite soft and not tender. There had been no vomiting. The uterus contracted well and the placenta and membranes came away entire. A douche of 1 in 2000 perchloride of mercury was given. At 11.30 P.M. the patient had recovered from the anæsthetic and was quite comfortable and in very good condition.

On Thursday both mother and child were doing well. The mother had not been sick since midnight, had taken two pints of hot milk and some beef-tea, and had no abdominal pain or tenderness. The temperature was 99° and the pulse was 88. The baby had a large caput succedaneum but otherwise was very well. On Friday morning at 11 o'clock I saw the mother again. She had had a comfortable night but had vomited once at 10.30 A.M. and had also had a large very loose action of the bowels at the same time. The abdomen was not rigid or distended or tender and the uterus could easily be felt. The temperature was 100° and the pulse was 96. The child was crying a good deal and as this seemed to annoy the mother he was taken into another room. At 4.30 P.M. I saw the mother again. She had vomited twice since noon and the bowels had been opened four times. There was some pain of a colicky nature in the abdomen but there was no rigidity or distension and the uterus was easily felt. There was no tenderness in the abdomen. The tongue was clean and moist. Nothing abnormal could be detected in the thorax. The temperature was 99.6° and the pulse was 96. I gave a quarter of a grain of morphine tartar hypodermically and ordered a dessertspoonful of hot water

persons of all ages. An examination of these tables reveals the following facts. "Hernia may appear for the first time at any age but the greatest number of herniæ are developed during the most active period of life and age lessens their frequency. In the first year of life a larger proportion of persons are ruptured than in any subsequent year. A large increase in the production of hernia occurs in males between the ages of 11 and 15 and in females between the ages of 16 and 20. The surprising frequency of male inguinal hernia, which occurs nearly six times as often as the other divisions taken together." In 100 men ruptured 97.5 have inguinal hernia and 2.5 have femoral hernia. Among 100 women ruptured 60.3 have inguinal hernia and 39.7 have femoral hernia. "Inguinal hernia occurs with greater frequency on the right than on the left side throughout all periods of life, though this is slightly more markedly so in men than in women."

Let us now consider the distinction between the pre-formed and the ordinary sac of an inguinal hernia as seen at an operation. I believe most surgeons will agree with the following remarks which I quote from Mr. Macready's work: "It is not always possible to distinguish from one another, either in the living or in the dead, the two classes of sacs, and therefore much which has been observed and written of hernial sacs applies to them indifferently, without regard to their mode of origin."

When an inguinal hernia appears during infancy or early childhood the sac is generally regarded as being of congenital origin but when the hernia appears for the first time during adult life the sac is usually considered to have been acquired. Before attempting to differentiate between the two forms of sac in the inguinal region it will be advisable to study the formation and structure of a typically congenital and a typically acquired sac in order to compare them and clearly to understand in what respect they resemble or differ one from the other. For this purpose we will compare the sac of a hernia which we know to have been acquired with the sac of one which we know to have been pre-formed. In the case of a ventral hernia, such as is occasionally seen after laparotomy, which beyond dispute is an acquired hernia, the weakened structures of the abdominal wall corresponding to the line of incision gradually yield, a general bulging takes place, and the parietal peritoneum protrudes, stretching the cicatrix over it. At the point where the bowel has escaped through the abdominal wall the muscles and aponeurosis are atrophied, the mouth of the sac is wide, it has no neck, and consequently strangulation of its contents very seldom occurs. When, on the other hand, the bowel or omentum passes through the external abdominal ring into a sac formed by the tunica vaginalis such a sac was obviously pre-formed and of congenital origin. The neck of the sac is long and narrow which accounts for the frequency with which strangulation of the contents occurs. In a congenital hernia the different parts of the sac can be readily differentiated into the mouth, the neck, and the body but in an acquired hernia there is no neck to the sac, the mouth opening directly into the body. Apart from their difference in origin the distinction between a typically acquired and a typically congenital sac is abundantly clear. In an ordinary inguinal hernia as seen in the adult the general conformation of the sac very closely resembles that of a congenital hernia and differs in many important particulars from the sac of an acquired hernia, yet curiously enough it is regarded by almost all surgeons who have written on this subject as having been acquired.

During the last few years I have operated upon a number of infants and older children for the radical cure of inguinal hernia and the experience thus obtained has greatly shaken my faith in the orthodox surgical belief. I have found that in the child, and even in the infant, the sac is in the vast majority of cases entirely separate from the tunica vaginalis and, apart from its delicacy in structure, exactly resembles that found in the ordinary hernia of the adult.

A few months ago I operated on the same afternoon upon a man, 45 years of age, and upon an infant, two months of age, for the radical cure of inguinal hernia. The general appearance and arrangement of the sac were identical in each and yet in the case of the infant it can hardly be disputed that the bowel had descended into a pre-formed sac. Two years ago a young man was admitted to hospital on account of a strangulated inguinal hernia. He had never been ruptured before and the hernia had appeared suddenly whilst he was lifting a heavy piece of timber. I saw him shortly after his admission and operated within five hours of

the accident. The hernia was scrotal, the sac being extremely thin and unconnected with the tunica vaginalis. Apart from its thinness the sac exactly resembled that ordinarily met with, yet it is much more probable that the bowel had descended into a still patent portion of the processus vaginalis than that a sac of such a size and shape had been suddenly acquired. Last year I operated upon a man, 49 years of age, for the radical cure of an inguinal hernia which had first appeared nine years previously. The appearance which the sac presented was very interesting; it was completely shut off from the tunica vaginalis but was connected with it by a firm fibrous cord one inch in length and one-eighth of an inch in diameter, which was pervious for a short distance at the upper part. In this instance, though the hernia had not appeared until the age of 40 years, it is obvious that the bowel had descended into an obliterated portion of the processus vaginalis.

After some experience in operating for oblique inguinal hernia in infants, older children, and adults, I have been greatly struck by the marked resemblance as regards the shape, general appearance, and relationship of the sac. I have been quite unable to distinguish between a pre-formed and an acquired inguinal sac, for, I believe, the very good reason that they are one and the same thing. In many cases of ordinary inguinal hernia occurring in adult life the sac on dissection has shown undoubted evidence of its pre-formation. It is generally agreed that in infants and young children the sac of an inguinal hernia is usually pre-formed; and if my observations and those of others are correct—viz., that in adult life exactly the same kind of sac as that seen in the infant is the one usually met with, the inference is obvious; both have a common origin. In a person with a perfectly formed abdominal wall I believe it to be impossible for a hernia to occur.

It is well known that partial patency of the processus vaginalis may persist throughout life and I am anxious to know with what relative frequency this patency is found in the dead body of the adult quite apart from hernia, for the relative frequency with which this process remains patent during adult life forms the strongest or weakest point, as the case may be, in my line of argument. Unfortunately, I have been unable to discover any such statistics based upon a sufficiently large number of cases to prove the point. However, Mr. Macready, quoting from Professor F. C. Hesselbach, says: "At birth the serous canal is very often open on one or both sides, either totally or partially. At first it tends to close very rapidly, but after the third week more slowly. In adult life patency of the canal, which may be met with up to an advanced age, though not uncommon, is far rarer than in childhood and the calibre of the passage seems to be usually very narrow." To quote still further from Mr. Macready's work: "The size of the opening is, as a rule, larger on the right side than on the left and oftentimes the size is greater in older than in the younger children; and this last fact implies that the tendency to obliteration may remain in abeyance and that the growth of the canal may keep pace with the growth of the child. This observation is of some consequence, for it assists to explain the abundant production of ruptures as the age of puberty is reached. Though complete or partial patency of the processus vaginalis is regarded as an important predisposing cause of rupture, at all events those in early life; there can be no doubt, if the evidence from the examination of the dead be received, that hernia enters this passage in the minority of instances in which it remains open. If an unclosed canal was universally attended with rupture, the number of ruptures, as Engel remarked, would be very much greater than it is."

How then can we explain the fact that hernia occurs in some cases and not in others? Granted the existence of a potential hernial sac, I would suggest that the occurrence or not of a hernia largely depends upon two factors—the size of the opening at the internal abdominal ring and the strength of the muscles guarding it. It is unnecessary for me to enter into anatomical details as to the obliquity of the inguinal canal and the attachment of the internal oblique and transversalis muscles, which together with Poupart's and the ligament form a sphincter-like structure guarding the canal. Mr. Hamilton Russell has particularly emphasised this point. If in the case of patency of the processus vaginalis the opening at the internal abdominal ring be small and the muscles guarding it (which with some justice might be called the inguinal sphincter) powerful, then the probabilities of a hernia occurring are slight. If, on the

intravascular leucolysis takes place to any great extent in leukemia. At least, cytolytic changes in dried films have not been specially noted in the recorded cases but it is quite conceivable that in the lymphatic form of leukemia more particularly large numbers of lymphoid cells are destroyed in the circulating blood. From Halber and Linser's experiments these latter cells appear to be the most susceptible to x ray influence. Is the diminution of the leucocytes in the circulating blood to be attributed to increased destruction of cells in the hæmopoietic organs or to inhibited production? If increased destruction is the cause one might expect to find evidence of this in the uric acid output. During the five months preceding the adoption of x ray treatment in our case frequent analyses of the uric acid output were made with a view to determine whether according to Horbaczewski's theory any relationship could be found between the purin output and the leucocyte count. At the same time estimations were made of the total nitrogen and total phosphoric acid. Before commencing these investigations it was anticipated that a stage in the progress of the disease might supervene in which the leucocytes might show a progressive tendency to diminish, so that one might definitely demonstrate whether a simultaneous rise in the uric acid took place as the result of leucocyte destruction. As already noted, however, no progressive diminution took place in the leucocyte count during these five months, although marked oscillations were frequent. As has been so frequently noted in leukemia, the absolute amount of uric acid excreted was found to be much in excess of the normal but it was impossible to demonstrate constantly any rise in the uric acid as the immediate result of a temporary fall of the leucocytes lasting, perhaps, one or two days. Nor could any clue as to the occurrence of leucocyte destruction be obtained from the amount of phosphoric acid excreted. This was slightly higher than normal but it bore the usual proportion to the total nitrogen excreted.

When the leucocytes were progressively falling under x ray influence a further short series of urinary analyses was made. It was found that the total amount of urine passed per day had slightly increased. The total nitrogen and total uric acid were both relatively high but the percentage of uric acid nitrogen in the total nitrogen remained only slightly affected. The phosphoric acid output was also relatively high but its proportion to the total nitrogen remained as before. It may therefore be assumed that the fall of the leucocytes in our case was not the result of increased destruction but more probably of diminished production.

During the last few months brief reports of urinary analyses in the course of the x ray treatment of leukemia have been recorded. Rosenberger¹¹ found a diminution in the uric acid while the leucocytes were falling. Sohleip and Hildebrandt¹² found that the variations in the amount of uric acid passed were so great that no conclusions could be drawn. Strümpell,¹³ Jocchim and Kurpijewitz,¹⁴ and Loessen and Morawitz¹⁵ (in one fatal case) demonstrated an increase in the uric acid while the leucocytes were falling. The bulk of the chemical evidence, however, is in favour of the view that the x rays exert an inhibitory action on the hæmopoietic organs. What effects do the rays produce on the leucocytes and uric acid output of healthy persons? In this connexion Bloch¹⁶ has recently reported a rise of the uric acid with a fall of the leucocytes in a case of chronic eczema exposed to the x rays. As this is merely an isolated observation it would not be desirable to draw any definite inferences at this stage. The subject demands further investigation. I shall now record briefly the post-mortem and histological findings in our case.

Both the lungs were much congested and in the right lung were several patches of catarrhal pneumonia. Both liver and spleen were enormously enlarged, the latter organ weighing 7½ pounds. The lymphatic glands on each side of the spine, both in the abdomen and thorax, were also enlarged and varied in size from that of a pea to that of a large bean. The bone marrow, as seen in the sternum, vertebrae, and ribs, had a pale pink colour. Without entering into

detail it will be sufficient here to note the more important changes in the blood-forming organs.

Spleen.—Malpighian follicles were practically absent. There was a marked development of coarse connective tissue pervading the spleen pulp but this fibrotic process had not advanced to the degree which one generally finds in chronic cases of spleno-medullary leukemia. The predominant cellular constituents of the pulp were large, mononuclear cells with intensely basophile protoplasm. Their nuclei were round or oval and slightly vesicular. In their morphology they resembled the basophile myelocytes of Dominici. Numerous mitotic figures in all stages were seen in these cells. Fully developed cells of the neutrophile series were very scarce.

Lymph gland.—No nodes were visible. Large basophile cells were here also predominant but there were also enormous numbers of giant cells mostly of the megakaryocyte type. Here and there were noted small groups of cells with ill-defined contours containing in their interior two or three densely stained half-moon-shaped bodies. It is probable that these cells represent degenerated megakaryocytes but it is difficult to explain how the broken-down nuclei should assume such regular semicircular forms.

Marrow from the sternum and ribs.—So far as its cellular constituents were concerned the marrow might be said to be in a markedly hypoplastic condition. Bony lamellæ and strands of connective tissue traverse the section, leaving small isolated cellular areas. Small or large lymphocytes were most numerous. Large basophile cells were scarce and giant cells were not nearly so numerous as in the lymph glands. Nucleated red cells were also very scarce.

Liver.—The interacinar capillaries were quite choked with leucocytes, the great majority of which consisted of the large basophile cells met with in the spleen and glands.

Can we bring these changes into line with those met with in the hæmopoietic organs of experimental animals that have been exposed to the x rays? The absence of Malpighian follicles in the spleen is a common feature in chronic spleno-medullary leukemia and hence cannot be regarded *per se* as the result of radio-therapy. The great scarcity of lymphoid elements in the spleen pulp is certainly a conspicuous feature but the most remarkable change is the substitution of proliferating undifferentiated basophile myelocytes for the fully formed neutrophile elements which one usually finds in the spleen of chronic spleno-medullary leukemia. In cases of acute leukemia these cells have been found in active proliferation in the bone marrow, spleen, and lymph glands (*vide* Aubertin¹⁶) and one might presume that the real cause of death was an attack of acute leukemia superposed on the chronic form during the leucopenic stage. The condition, however, permits of another, and to me more probable, explanation. During the first series of x ray séances the percentage of cells of the neutrophile series rose (the increase affecting the polynuclear elements), while the lymphocyte percentage fell. After the suspension of the rays in August the lymphocyte percentage began again to mount upwards. On the resumption of the x ray treatment in December the neutrophile percentage rose markedly while the lymphocyte percentage fell, but the change was only transitory. When the total leucocyte count was approaching normal limits the polynuclear percentage fell markedly while the lymphocyte percentage rose. So long as a relatively high leucocyte count obtained, the main effect of the x rays would be on the lymphocyte series, as Heineke noted. Now, from the histological appearances it would seem that the spleen and lymph glands were the hæmopoietic organs most actively functioning. Thus, in spite of the inhibitory action of the rays on the myeloid function of the spleen there would result, owing to the destruction of the more susceptible lymphocytes, a relative increase of fully formed polynuclear cells in the circulating blood. When, however, the leucopenic stage intervened during the second series of séances, the ever-increasing tendency to diminished production must have considerably curtailed the myeloid function of the spleen or its power of sending forth into the circulation more or less fully formed neutrophile cells. Moreover, what one might call the Mosè and Michner effect already referred to would come into play. Hence the presence in such numbers of these basophile-indifferent cells in the spleen and glands, accompanied by a diminution in the fully formed neutrophile cells of the circulating blood, might not be so unexpected a

¹¹ Rosenberger. *Centrallblatt für Innere Medizin*, No. 40, Oct. 7th, 1905.

¹² Sohleip and Hildebrandt. *Münchener Medizinische Wochenschrift*, No. 9, 1905.

¹³ Strümpell. *Fortschritte aus dem Gebiete der Röntgenstrahlen*, Band VIII, Heft 2, 1905.

¹⁴ Jocchim and Kurpijewitz. *Deutsche Medizinische Wochenschrift*, No. 23, 1905.

¹⁵ Loessen and Morawitz. *Deutsches Archiv für Klinische Medizin*, Band LXXIII, Heft 3 and 4.

¹⁶ Aubertin. *La Semaine Médicale*, No. 24, 1905.

every hour by the mouth with the addition of ten minims of brandy in each spoonful of water. At 9.30 P.M. the woman was comfortable and free from pain. There had been no more vomiting and the bowels had not acted again. The temperature was 100° and the pulse was 100.

At 3.30 A.M. on Saturday I was sent for again. The woman had become much worse, had vomited repeatedly, complained of intense abdominal pain, and become much collapsed. She was clearly in *extremis*; the temperature was 98°, the pulse was 140, but the abdomen was not rigid or distended. There was slight tenderness on the left side of the uterus. The tongue was clean and moist. There was no dulness in the flanks. Hot-water bottles were applied to the abdomen and a quarter of a grain of morphine tartrate and ½ of a grain of strychnine-hydrochloride were given hypodermically. The patient never rallied and death occurred at 5 A.M.

Post mortem there was about an ounce of blood-stained serum in the pericardium and in each pleural cavity. The lungs, heart, brain, spleen, liver, and kidneys were healthy. The small intestine was hyperæmic in places. Round the left ovary and in Douglas's pouch and in the lesser sac of the peritoneum was some flaky lymph. The stomach, pancreas and duodenum, and the appendix were healthy. There were several old adhesions round the left ovary and Fallopian tube, both of which were deeply congested. A drop of thick yellow pus was escaping from the left Fallopian tube, which contained about half a drachm more of the same material. The interior of the uterus was quite healthy. I could obtain no history of any symptoms of salpingo-oophoritis from any of the relatives.

The baby, having been taken out of the mother's room on Friday morning, was put to sleep on a cushion in an armchair in the kitchen. He was seen at 1 P.M. and was then all right, but at 2.30 P.M. he was found dead. A post-mortem examination showed that death was due to suffocation.

Weybridge.

HÆMATOLOGICAL AND CHEMICAL OBSERVATIONS IN A CASE OF SPLENO-MEDULLARY LEUKÆMIA UNDER X RAY TREATMENT,

WITH AN ACCOUNT OF THE HISTOLOGY OF THE HÆMOPOIETIC ORGANS AFTER DEATH.

By J. C. G. LEDINGHAM, M.B., B.Sc., M.A. ABERD.,
- LISTER INSTITUTE OF PREVENTIVE MEDICINE ELSTREE.

(From the Bacteriological Departments of the University of Aberdeen and London Hospital.)

At a laboratory meeting of the Pathological Society of London held at Claybury in July last a paper under the above title was read by me and will appear in due course in the published Transactions of the society. In view of the fact, however, that a preliminary communication on the same case was made to THE LANCET in January, 1905,¹ I propose here to record briefly the main results obtained during the latter history of the case.

The first series of x ray sèances lasted from May 17th to August 8th, 1904, and at the end of that time the patient's general condition had enormously improved while the changes in the blood picture were most striking. The white cells fell from an average of 200,000 to an average of 20,000 per cubic millimetre in the course of six weeks and there was also a very appreciable rise of the red cells in the same time. The red cell maximum was not reached, however, till the middle of August when the white cells were already mounting slowly upwards after the suspension of the x rays. Arneth² in a recent paper has also noted this late response on the part of the red cells to x ray influence. During September, October, and November, 1904, the patient remained in a convalescent home where he enjoyed excellent health. Frequent blood examinations were made during this time and it was found that the white cells were rising very gradually and in a somewhat irregular fashion. At the end of November a level of 60,000 had been reached. It is

an exceedingly suggestive fact that the suspension of radiotherapy for three months did little more than raise the total count of the white cells to one-third only of their numbers at the commencement of the treatment. It certainly shows that the radio-therapy had exerted an inhibitory influence on the proliferative functions of the blood-forming organs.

After the patient's return to hospital a second series of x ray sèances was commenced on Dec. 1st, 1904, and again there was a remarkable response on the part of the blood elements. The white cells fell progressively in the course of six weeks to the normal, or rather subnormal, level of 7000. When this low level had been reached the question of the advisability of continuing the x ray treatment was raised, the risk being that the circulating blood might be completely depleted of leucocytes, and in the light of the recent animal experiments of Halber and Linser³ to which I shall refer later, this fear would have been perfectly justified. However, no such effect took place. This low level proved again to be a position of unstable equilibrium and the white cells rose very slowly to a level of 12,000. It is impossible to say whether the white cells could have been retained for an indefinite period within normal limits, owing to the unfortunate intervention of an influenza attack leading to the fatal conclusion. On Feb. 24th the temperature, which hitherto had run a consistently normal or subnormal course, rose to 101° F. This heralded an attack of bronchitis during which the temperature rose on one occasion to 102° 5°. The clinical symptoms were not, however, very pronounced and the end came rather unexpectedly on March 8th—i.e., 14 days after the commencement of the intercurrent affection. One count only was made during the fatal illness and the white cells were found to have mounted up to 43,000. The leukæmic leucocytes had in fact reacted to the intercurrent affection somewhat more vigorously than normal leucocytes would but in the same direction. Now it is a well-established fact that intercurrent affections in leukæmia produce a great fall in the number of leucocytes but here in the leucopenic stage of leukæmia the reaction was in the opposite direction.

A necropsy was fortunately obtained and I am indebted to Dr. G. M. Duncan of the Pathological Department, University of Aberdeen, for notes of the necropsy and for the tissues which were kindly forwarded to me for microscopical examination. The opportunity was thus afforded me of comparing the organic lesions with those described by Heineke⁴ Mosse and Milchner,⁵ Halber and Linser,⁶ and others in experiments on animals. Heineke found that the exposure of small animals such as mice to the x rays produced a destruction of the lymphoid follicles in the spleen and lymph glands. The nuclear detritus was taken up by phagocytes and the node was replaced by connective tissue and epithelioid cells. Prolonged exposure was followed by partial destruction of the granular cells of the marrow. Mosse and Milchner showed that in animals exposed to the x rays the bone marrow is profoundly influenced. The changes affect principally the cells of the neutrophile series which are greatly diminished in numbers, the surviving cells exhibiting great deficiency of granules. The experiments of Halber and Linser are even more remarkable. By prolonged exposure of small animals to the x rays they were able to deplete the circulating blood entirely of leucocytes (as measured by ordinary counting methods). The larger the animal the more difficult it was to free the blood of leucocytes and frequently in rabbits and dogs it was impossible to get lower counts than 1500 or 2000 by continued exposure. They maintained from examination of films that the destruction of leucocytes took place in the general circulation and not in the blood-forming organs. Further, fatal results sometimes ensued which they attributed to the evil effects of leucotoxins set free from the broken-down leucocytes. The serum of x-rayed animals had also the power of causing the destruction of leucocytes when injected into fresh animals. The question as to whether a destruction of leucocytes takes place in the general circulation is an important one. Most observers, with the exception of Grawitz,⁷ Aubertin and Beaujard,⁸ Weil and Aubertin,⁹ are inclined to doubt that

³ Halber and Linser: *Ibid.*, April 11th, 1905.

⁴ Heineke: *Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie*, Heft 5, 1905.

⁵ Mosse and Milchner: *Berliner Klinische Wochenschrift*, No. 49, 1904.

⁶ Loc. cit.

⁷ Grawitz: *Deutsche Medizinische Wochenschrift*, No. 50, 1904.

⁸ Aubertin et Beaujard: *Comptes Rendus de la Société de Biologie*, 1904, No. 21, p. 322, and 1905, No. 4, p. 177.

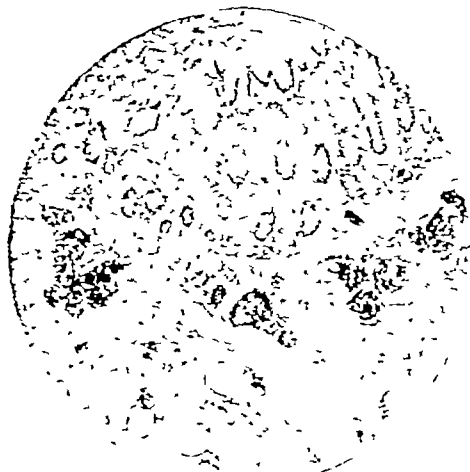
⁹ Weil and Aubertin: *Ibid.*, 1905, No. 25, p. 25.

¹ Ledingham and McKerron: *THE LANCET*, Jan. 14th, 1905, p. 71.
² Arneth: *Münchener Medizinische Wochenschrift*, Nos. 32, 33, 34, 1905.

Dr. F. M. Sandwith, in an article on bilharziosis,¹ points out that there are three possible routes by which the miracidium or embryo trematode may arrive at its destination: (1) by the mouth; (2) by the skin; and (3) by the urethra or rectum. Of the above, Dr. Sandwith thinks the mouth is the most probable.

1. People who do not bathe in the rivers, ponds, &c., and who do not drink water which has not been boiled, can live

FIG. 1.



Magnified 65 diameters. Shows ova in clumps just outside the muscularis mucosae, and two internal to it.

in the countries in which this disease is endemic (e.g., Egypt, South Africa, Syria, &c.) and seldom contract it. Against this theory may be urged that: (a) bilharzia eggs or embryos have never been discovered in any molluscs or other articles of diet—in fact, the intermediate host of the bilharzia is unknown, if, indeed, there be one; and (b) that the embryo or miracidium which usually hatches in about half an hour after the ovum is voided in the urine is quickly killed if it is placed in an acid solution of equal strength to the gastric juice.

FIG. 2.



Magnified 110 diameters. Two ova just outside muscularis mucosae.

2. Infection by the skin. Dr. John Harley, who first discovered bilharzia in South Africa in 1854, supported this view. I do not know of any other evidence in the favour of it except, if we may judge from analogy, ankylostomum duodenale has lately been shown to attack its host in this manner.

3. The third possible means of entry is by the urethra or less often by the rectum.

Dr. Sandwith states that in the Cairo hospitals the proportion of males to females suffering with this disease is 24 males to one female; and also that when females are attacked it is often the vagina alone that is affected. There is also a good deal of evidence in favour of the disease being contracted when bathing. The only place in the human body where the bilharzia has been found sexually active is in the portal veins; it would be easier for the embryos to get into the portal system from the urethra or rectum than from the mouth, where they would have to traverse the acid gastric juice.

In the case which I am describing we unfortunately only found the bilharzia ova in the appendix after the patient had left the hospital and was on his way to South Africa, so no special search for bilharziosis could be undertaken. However, the patient had incidentally said that he had frequently bathed since he had had the sinus in his back.

From the above facts I conclude that the patient first had an attack of appendicitis, which eventually left him with a sinus, leading to an abscess cavity, in close connexion with the proximal part of his appendix, and that afterwards the sinus was the means of entry of the bilharzia while he was bathing. This is, I think, a more probable explanation than that the original appendicitis was due to bilharzia infection.

On looking through the recent literature on the subject, I have been unable to find any account of a case of primary infection of the vermiform appendix with bilharzia. Dr. H. A. Kelly, in his treatise on the appendix, mentions cases in which each of the common parasitic worms that are found in the human body, including ascaris lumbricoides, tape-worms, and echinococcus, was found in the appendix. Thread-worms are not by any means so rare as the above, especially in children. Dr. Kelly also mentions that Aireton had a case of bilharzia of the appendix. I have been unsuccessful in tracing this further as no reference is given. Mr. F. R. S. Milton, surgeon to the Kasr el-Ainy Hospital, Cairo, in a series of lectures on the Surgery of Bilharziosis² does not mention any case in which the appendix was the seat of infection. Mr. Milton, however, reports a case in which the only manifestation of the disease was a sinus leading from the buttock to the sacrum. How far the case is analogous to the one now recorded it is impossible to say.

PATHOLOGICAL REPORT BY MR. SHAW.

Macroscopic.—The specimen is that of a vermiform appendix about two inches in length; it is about one-third of an inch in diameter; its peritoneal and muscular coats are torn in places, exposing the mucous membrane, and its peritoneal surface is discoloured and covered by old adhesions. A piece was cut out from each end after being hardened in Müller's fluid and microscopic sections were prepared.

Microscopic examination.—(a) *Proximal end.*—The lumen of the appendix is small and contains numbers of cast-off epithelial cells and leucocytes embedded in mucus, the lining epithelium is intact, and the glands of the mucous membrane are very numerous. A few nodules of lymphoid tissue are present. Outside this the submucous layer contains large numbers of wide lymphatic spaces. The muscular coats are of normal thickness and are deficient in places, having been torn during the removal of the appendix. The peritoneal coat is irregularly thickened and contains many small round cells; blood-vessels are numerous and large. There are collections of small round cells in all the coats of the appendix and dilated lymphatic vessels full of leucocytes are also seen. The evidences of inflammation are present mostly in the outer part of the wall of the tube. In the submucous coat immediately outside the muscularis mucosae there are numbers of darkly-stained bodies grouped together in some places in colonies of from four to eight in number; some are lying singly and some in pairs. The bodies are darkly stained with hematoxylin and lie in the connective tissue spaces. Seen in their long diameter they are about 0.1 millimetre in length and are oval in shape, some with rounded ends, others with tapering extremities, others again have one end rounded and the other prolonged to a sharp point. In several instances there is seen a kind of blunt spine on one side. On cross section the bodies are round. With the low power (Leitz's 3) a definite envelope can be made out and inside this there is in some of the bodies a mass of broken-up structureless material, while in others there are

¹ Practitioner, October, 1904.

² Journal of Tropical Medicine, June and July, 1922.

phenomenon. Whether such a spleen would serve the organism more beneficially than a more fully developed myeloid organ is difficult to decide. Most probably it would not, as undoubtedly the needs of the body would be better served by an organ whose power of manufacturing and sending into the blood stream an excess of fully developed neutrophile cells was well maintained.

The above considerations lead me to think that in the interests of the patient it would be advisable to exercise the greatest caution in continuing x ray treatment once the total leucocytes have attained normal limits. This is all the more necessary when one remembers the startling results of Halber and Linser's experiments which, though still lacking confirmation, suggest to us the greatest circumspection in the employment of radio-therapy under the conditions indicated; indeed, in the very few recorded cases of leukaemia which have ended fatally during or after x ray treatment the effects of leucotoxic products or liberated ferments have been assigned as exciting causes. As yet the only fatal case in which an accurate histological examination of the organs has been made is that recorded by Lørsen and Morawitz. Krause¹⁷ reported shortly in one case that it was impossible to demonstrate in the hæmopoietic organs changes which are not usually associated with leukaemia, and Lommel¹⁸ who examined the spleen in a case of pseudo-leukaemia which had been exposed to the rays, noted that the organ was very poor in lymphocytes.

Lørsen and Morawitz's case did not respond satisfactorily to the x rays. The leucocytes were profoundly influenced but the general condition did not improve. The histological changes they reported were briefly as follows. The spleen pulp showed a great scarcity of leucocytes, especially of myelocytes and lymphocytes. Fibroblasts were numerous. The lymph glands were also greatly deficient in lymphatic elements. The marrow especially showed great hypoplasia with regard to its myeloid and lymphatic elements. The interstitial tissue of the marrow was also increased. As a result of their findings the authors believe that in certain cases the x rays may give rise to a recognisable hypoplasia of the blood-forming organs. No satisfactory explanation has yet been given of the enormous improvement which almost invariably occurs in the general condition of the patient under the x rays. It is at least difficult to bring it into relationship with the blood changes. Of course, on the assumption of Senn and Ahrens that the x rays inhibit the development of, or actually destroy, the hypothetical parasite of leukaemia (Löwit), this improvement in the general condition would find ready explanation.

Certain investigations (to be recorded elsewhere) which I have made on the rôle played by the leucocytes of spleno-medullary leukaemia in the process of phagocytosis of bacteria have shown that in the leukaemic serum the substance preparing the bacteria for ingestion by the phagocyte ("opsonin" of Wright and Douglas) is generally in normal amount as measured by normal leucocytes, while a very much lower index is obtained when measured by the patient's own phagocytes. The myelocytes have exceedingly feeble phagocytic power and hence any factor that increases the number of ripe polynuclears in the circulating blood must also render the normal supply of opsonin more available for purposes of efficient phagocytosis and removal of effete matter from the tissues. It may be noted that in chronic lymphatic leukaemia the conditions appear to be reversed. At least in the two cases which I had the opportunity of examining frequently the polynuclear leucocytes, though constituting only 2 or 3 per cent. of the total, had almost double the phagocytic power of leucocytes of healthy people. In these cases the true opsonic indices as measured with the patient's own serum and phagocytes were relatively high. In performing these tests staphylococci and tubercle bacilli were employed.

Elastree.

¹⁷ Krause: Fortschritte aus dem Gebiete der Röntgenstrahlen, Band VIII., Heft 3, 1905.

¹⁸ Lommel: Münchener Medizinische Wochenschrift, 1905, p. 904.

SEAMEN'S HOSPITAL, GREENWICH.—On Thursday, Feb. 15th, the members of the local branch of the British Medical Association are to visit the Seamen's Hospital, Greenwich, in connexion with the new post-graduate school which has just been established at that institution. The staff of the hospital wish it to be known that any medical man, whether belonging to the local branch or not, will be welcomed. There will be an exhibition of cases and it is intended to hold the meeting at about 4 P.M.

A CASE OF BILHARZIA INFECTION OF THE VERMIFORM APPENDIX.

By J. BURFIELD, M.B., B.S. LOND., F.R.O.S. ENG.,
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With a *Pathological Report* by ERNEST H. SHAW,
M.R.C.S. Eng., L.R.C.P. Lond.,
HOUSE SURGEON, ST. BARTHOLOMEW'S HOSPITAL.

THE patient, a well-developed but rather anæmic man, aged 36 years, was a goods clerk in a railway station in South Africa. He was admitted to St. Bartholomew's Hospital on June 24th, 1905, on account of a sinus in the right gluteal region. The sinus had persisted since January, 1904, when an abscess was opened there by Dr. J. B. S. Greathead at the Albany General Hospital, South Africa. He had come from South Africa to have the sinus cured. His history was as follows. In January, 1899, he had a slight attack of appendicitis which cleared up after rest in bed for ten days. In April, 1902, a large tender swelling developed in the right iliac region; he had fever and was constipated. He was sent to the Albany Central Hospital by Dr. E. G. D. Drury. At this time the swelling could be felt per rectum; it was painful and fluctuated. The pelvic swelling became smaller and the patient was discharged in six weeks without any operation being performed. But the swelling never entirely disappeared and the patient was very weak and unable to do any work till October, 1902, when the abscess pointed on the right lumbar region. Two incisions were made into this between the last rib and the iliac bone and some foul-smelling, dark brown pus was let out. In December, 1902, he was able to work again, wearing a drainage-tube in the sinus.

In January, 1904, another abscess developed in the upper part of the right gluteal region outside the posterior superior spine of the ilium and the patient was readmitted into the Albany Hospital. The appendix region was then explored by the usual oblique incision in the anterior abdominal wall. Dense adhesions were found and a fluctuating swelling was discovered behind the pelvic peritoneum in the region of the sciatic notch. The anterior incision was therefore closed. The abscess in the right buttock was opened up and its cavity was found to lead into the pelvis through the sciatic notch into an abscess in front of the sacrum, whence several ounces of dark faecal smelling pus were let out. This sinus was still discharging on the patient's admission to St. Bartholomew's Hospital under Mr. C. B. Lockwood in June, 1905. His condition was as follows. There was a scar about four inches long in the anterior abdominal wall, which was the seat of a ventral hernia. Behind there were four scars in the right lumbar and gluteal regions, in the lowest of which there was a sinus leading forwards and inwards for about four inches. The sciatic notch could be felt with a probe but the bone was not bare. There were resistance and tenderness in the right iliac fossa. The urine was natural and did not contain blood or pus cells although systematically examined.

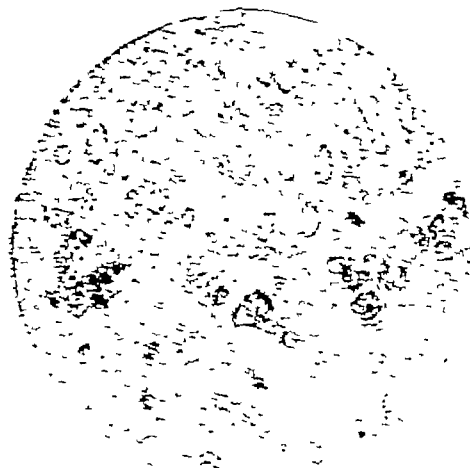
On July 14th, as the sinus showed no signs of closing, Mr. Lockwood explored the appendix region through the scar in the anterior abdominal wall. After a long and tedious search, lasting over an hour on account of the dense adhesions, the proximal end of the appendix was found very firmly adherent to the posterior pelvic wall near the sciatic notch; this part of the appendix was removed. The distal end had apparently sloughed away. A small drainage-tube was left in and the abdominal wall was sutured in layers. The patient left the hospital five weeks after the operation; the abdominal wall had soundly healed. The posterior sinus was healing quickly and was only about one inch in length.

On cutting sections of the appendix ova of bilharzia hæmatobia were seen; they are shown in the accompanying micro-photographs (Figs. 1 and 2). There was nothing to suggest bilharzia infection of the genito-urinary tract or of the rectum; the patient never had diarrhoea and no blood or mucus was ever seen in his stools. Apart from the extreme rarity of bilharzia infection of the appendix, this case is instructive because it throws some light on the way by which the parasite may enter its host.

Dr. F. M. Sandwith in an article on typhus fever points out that there are three possible routes by which the typhus fever or enteric fever may arise at its destination: (1) by the mouth; (2) by the skin; and (3) by the system or system. Of the above, Dr. Sandwith thinks the mouth is the most probable.

1. People who do not bathe in the stream, ponds, &c., and who do not drink water which has not been boiled, can live

FIG. 1.



Micrograph of specimen. Shows several small, dark, oval-shaped structures, likely typhus fever or enteric fever, embedded in a lighter, granular matrix.

in the countries in which this disease is endemic (e.g., Egypt, South Africa, Syria, &c.) and seldom common in England this theory may be ruled out: (a) typhus fever or enteric fever have never been discovered in any material or other studies of the—In fact, the immediate host of the typhus is unknown, it indeed, there be one; and (b) that the typhus or enteric fever which usually attacks in about half an hour after the victim is killed in one minute is quickly killed if it is placed in a weak solution of equal strength to the gastric juice.

FIG. 2.



Micrograph of specimen. Shows a large, dark, oval-shaped structure, likely typhus fever or enteric fever, embedded in a lighter, granular matrix.

2. Infection by the skin. Dr. J. H. Huxley, who has observed typhus fever in South Africa in 1881, suggested this view. I do not know of any other evidence in the favor of it except that it is very rare from Africa, and typhus fever has been shown to attack the host in the manner.

3. The third possible means of entry is by the system or system of the system.

—F. BUEFIELD, Oct. 1905.

Dr. Sandwith states that in the Oude hospital the proportion of males to females suffering with this disease is 21 males to one female; and also that when females are attacked it is often the vagina alone that is affected. There is also a good deal of evidence in favor of the disease being contracted when bathing. The only place in the human body where the typhus has been found usually active is in the nasal cavity; it would be easier for the typhus to get into the nasal system from the system or system than from the mouth, where they would have to traverse the acid gastric juice.

In the case which I am describing we unfortunately only found the typhus one in the appendix after the patient had left the hospital and was on his way to South Africa, so no special search for typhus could be undertaken. However, the patient had incidentally said that he had frequently bathed since he had had the fever in his back.

From the above facts I conclude that the patient first had an attack of appendicitis which eventually left him with a sinus, leading to an abscess cavity, in close connection with the peritoneal part of his appendix and that afterwards the sinus was the means of entry of the typhus while he was bathing. This is I think a more probable explanation than that the original appendicitis was due to typhus infection.

On looking through the recent literature on the subject I have been unable to find any account of a case of primary infection of the typhus appendix with typhus. Dr. H. A. Kelly, in his treatise on the typhus, mentions cases in which each of the common typhus forms that are found in the human body, including typhus, typhoid, enteric, and enteric, was found in the appendix. These forms are not by any means so rare as the above especially in children. Dr. Kelly also mentions that there had a case of typhus of the appendix. I have been unsuccessful in making this further reference to given. Dr. B. D. S. Wilson, surgeon to the Glasgow Hospital, Glasgow, in a series of lectures on the surgery of typhus, does not mention any case in which the typhus was the seat of infection. Mr. Wilson, however, reports a case in which the only manifestation of the disease was a sinus leading from the trunk to the stomach. How far the case is analogous to the one now recorded it is impossible to say.

PATHOLOGICAL EXAMINATIONS BY MR. SHAW.

Macroscopic.—The specimen is that of a typhus appendix about two inches in length; it is about one-third of an inch in diameter; its peritoneal and muscular coats are torn in places, exposing the mucous membrane, and the peritoneal surface is discolored and covered by old adhesions. A piece was cut out from each end after being fastened in Muller's fluid and microscopic sections were prepared.

Microscopic examination.—(a) *Proximal end.*—The inner of the appendix is small and contains numbers of ciliated epithelial cells and leucocytes embedded in mucus, the lining epithelium is intact, and the glands of the mucous membrane are very numerous. A few colonies of typhoid virus are present. Outside the submucosa layer contains large numbers of white lymphatic corpuscles. The muscular coats are of normal thickness and are distinct in places, having been torn during the removal of the appendix. The peritoneal coat is irregularly thickened and contains many small round cells: these vessels are numerous and large. There are collections of small round cells in all the coats of the appendix and of small lymphatic vessels in all the coats. The vessels of the submucosa are swollen, many in the outer part of the wall of the tube. In the submucosa coat immediately outside the muscularis mucosae there are numbers of dark-stained bodies grouped together in some places in columns of four five or eight in number; some are lying singly and some in pairs. The bodies are dark stained with hematoxylin and lie in the connective tissue spaces. Seen in thinning sections they are about 0.5 microns in length and are oval in shape. Some with rounded ends, others with slightly emarginated ends, again have one end rounded and the other pointed to a sharp point. In several instances there is seen a halo of thin granular material. On cross section the bodies are round, with the lower part (darker) a definite envelope can be made out and inside this there is a core of the bodies a mass of granular material, while in others there are

collections of round granules about one-third of the size of a red blood corpuscle. Stained with methylene blue these granules are dark blue in colour, and around them and filling up the remainder of the envelope is a structureless hazy-looking mass lightly stained with blue. The envelope is also stained deeply blue. Some of the bodies are distorted and broken up and, from their staining reaction, give one the impression that they have undergone some degenerative change—i.e., calcareous degeneration. With the high power (Leitz's $\frac{1}{2}$) the granules and the definite chitinous-looking wall can be seen much better. A few of these bodies, which correspond exactly in size and shape to the ova of the bilharzia hæmatobia, and are no doubt the ova of that worm, are seen in the lymphoid tissue of the mucosa, and there are many in the peritoneal coat. None are seen in the lumen of the appendix, nor can any be seen in the muscular coats.

(b) *Distal end.*—The tissues show very little evidence of inflammation and there is no ulceration of the mucosa. But the ova are present in the same situations and in large numbers. This points to an invasion of the whole length of the wall of the appendix by the ova.

The accompanying illustrations, which were prepared by Mr. Albert Norman, show the general distribution and structure of the ova. Another section has since been made from about the middle of the tube and shows the same appearances with, in addition, a very interesting feature—that is, an ovum in a lymphoid nodule and partly surrounded by large multinucleated giant cells.

We are much indebted to Mr. Lockwood both for his kind help in the preparation of this article and also for his permission to publish it.

St. Bartholomew's Hospital.

A CASE OF TORSION OF THE TESTICLE.

By R. M. GOING, F.R.O.S. Eng.

With Notes on the Pathological Condition in Three Specimens by ARTHUR KEITH, M.D. Aberd., F.R.O.S. Eng.

THE patient, aged 17 years, was first seen on Sept. 11th, 1905, for pain and swelling of the left side of the scrotum. It was difficult to get a complete history as the lad was mentally deficient since birth. About four years previously he had a blow on his scrotum which became swollen; he was attended by a medical man who kept him in bed till the swelling had disappeared. Several times since then he complained of pain in his scrotum but not severe enough to cause him to lie up. For some months past his mother noticed that his gait had been different from what it was previously—namely, he walked with his thighs kept close together. On Sept. 9th he complained of pain in the left side of his scrotum after defæcation. On the 11th I first saw him. The left side of his scrotum was swollen; the skin over it was red and slightly oedematous; it was very tender and the swelling extended up as far as the external abdominal ring, but the spermatic cord could be distinctly felt above the swelling. His pulse and temperature were normal and he had no other symptoms. It appeared to me to be a case of acute orchitis but I could not find any satisfactory cause for it. On the 12th he was seen by my partner, Dr. F. H. Alexander, who found the local condition much the same. The patient, however, had vomited several times and complained of headache; his bowels had not acted since the 9th and there was difficulty in micturition. On the 13th I again saw him; the local signs were as before, though the swelling was somewhat larger and there was a bluish discolouration of the skin over the testicle. We came to the conclusion that the case was one of torsion of the testicle. On the 14th I made an incision over the swelling; the tissues were greatly oedematous and on exposing the tunica vaginalis it was found to be greatly enlarged and adherent to the surrounding tissues. On opening the tunica vaginalis, which was greatly thickened, a dark purple-coloured mass was seen in front, which afterwards was found to be the globus major of the epididymis, and behind it was the testicle of a fairly normal colour and not much enlarged. There was very little, if any, fluid in the tunica vaginalis. I then dissected the tunica vaginalis from the surrounding parts and having ligatured the cord with fine silk close to

the external abdominal ring excised it. A small drainage-tube was placed in the lower end of the scrotum through a small incision. The original wound was closed with silk-worm-gut sutures and dressed with cyanide gauze. The drainage-tube was removed in 48 hours and the wound healed by first intention, the patient being allowed up on the fourteenth day. Since then he has been quite well and walks normally.

The case is interesting from the following points. 1. The rarity of the condition, only two cases occurring at the London Hospital in the last six years. I can find very few recorded cases, the last one being by Mr. G. H. Edington in THE LANCET of June 25th, 1904, p. 1782. 2. Recurring attacks with apparent recovery for several years. 3. The difficulty of diagnosis with an incomplete history from orchitis. 4. The apparent confusion between this condition and that of torsion of the spermatic cord.

Notes by Dr. KEITH.—With the addition of Mr. Going's case there are now three specimens in the London Hospital Museum representing strangulation of the testicle caused by the twisting of an abnormally long and narrow testicular mesentery. The normal attachment of the testicle is shown in Fig. 4; the whole length of the posterior border of both testicle and epididymis is bound firmly by a mesentery containing much fibro-muscular tissue between its widely separated layers. It is impossible to conceive that the normal attachment of the testicle could become twisted so as to give rise to strangulation in any circumstances whatsoever. Mr. W. McAdam Eccles¹ and Mr. E. M. Corner² attribute the possibility of such a twisting to the presence of such an elongated mesentery as is frequently found in imperfectly descended testes and this explanation I believe to be right.

So far I have not used the term "mesorchium" because, strictly speaking, it should not be applied to the mesentery that binds the testicle and epididymis to the posterior wall of the tunica vaginalis; that attachment represents the common mesentery of the testicle and of the Wolffian body, out of which the epididymis is developed. At first the testicle and Wolffian body have each their mesentery, which even then, however, fuse at their bases to form a common mesentery, but in the normal course of development in the male these bodies approach each other and their independent mesenteries disappear. I would willingly overcome any scruples about the strict use of the term mesorchium and apply it to the mesentery that normally binds the testicle to the tunica vaginalis and cord were it not that Mr. Corner² has figured the occurrence of a true mesorchium (see Fig. 6), which binds the testicle to the epididymis and common mesentery, just as the mesovarium binds the ovary to the broad ligament. In the female the mesentery of the Wolffian body forms the mesosalpinx; the basal part of the broad ligament represents the common mesentery.

A search amongst comparative and embryological material has not brought to light any animal in which the male genital gland is attached by a long narrow mesentery such as occurs in the three cases figured in Figs. 1, 2, and 3. But there is certainly one error of development in these cases, a malformation or maldevelopment of the gubernaculum testis. In Fig. 5 it will be seen that the gubernaculum grows up not only within the posterior or caudal end of the common mesentery of the genital gland, but also within the mesenteries of the Wolffian body and mesorchium and seizes the globus minor of the epididymis and caudal or posterior pole of the testis. A remnant of the gubernaculum is seen in the adult testis in Fig. 4 (7). In none of the three cases of strangulation of the testicle due to twisting dealt with here was there any trace of the gubernaculum; it is evident in Figs. 1 and 2 that the gubernaculum had laid hold of, not the testis and epididymis, but of the vas deferens which is seen to make a loop on the tunica vaginalis; further, it is inconceivable that a gubernaculum could ever have reached the testicle through such attachments as are shown in Figs. 1, 2, and 3. It is probable that such genital glands are provided *ab initio* with abnormally long mesenteries and that the gubernaculum seizes the peritoneum near the mesenteric base, but the elongated, pedunculated form of the mesentery of the testicle in these cases is produced on the arrival of that organ at the internal abdominal ring. The

¹ Mr. W. McAdam Eccles: The Imperfectly Descended Testes, 1903.

² Mr. E. M. Corner: The Wandering Testicle, Clinical Journal, vol. xxv., 1904-05, pp. 302-04.

³ Ibid.

FIG. 1.

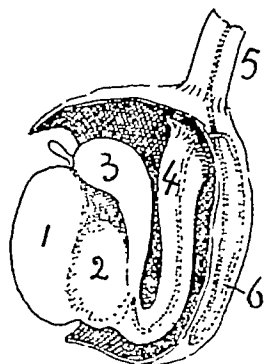


FIG. 2.



FIG. 3.

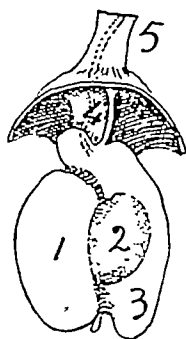


FIG. 4.

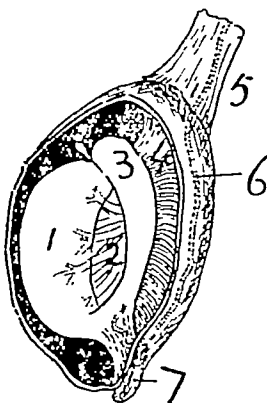


FIG. 5.

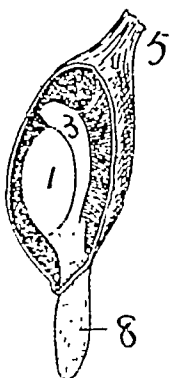


FIG. 6.

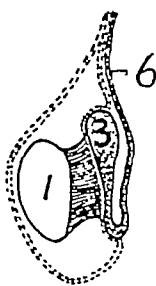


Fig. 1. Mr. Goling's case. Fig. 2. Dr. W. M. Sing's case. Fig. 3. Mr. H. L. Barnard's case. Fig. 4. Showing the normal attachment of the testicle and remnant of the gubernaculum. Fig. 5. The relationship of the normal gubernaculum to testis and epididymis (from a seventh month fetus). Fig. 6. An adaptation of Mr. Corner's diagram of the "wandering" testicle. 1. Testicle. 2. Swelling caused by the engorgement and thrombosis of the veins shown in Fig. 4. 3. Epididymis (globus major). 4. Mesentery of testicle, elongated so as to represent an intra-tunicate part of the cord in Figs. 1, 2, and 3. 5. The spermatic cord. 6. The vas deferens which makes a loop on the tunica vaginalis in Figs. 1 and 2. 7. Remnant of the gubernaculum in adult. 8. Gubernaculum of a seventh month fetus. The caudal pole of the gubernaculum is normally smooth and has no adhesions to the surrounding parts. In Fig. 1 the twisting has been undone and the testicle restored to the position which it probably occupied during health.

gubernaculum in such cases cannot exert its strength directly on the testis to pull it through the abdominal wall but indirectly by means of the peritoneum and during the exercise of its force an elongation and narrowing of the mesentery of the genital organ would probably be produced. In short, I regard these testes which undergo torsion as allied with those which do not descend. Both are testes in which there is a maldevelopment of the genital mesentery and of the gubernaculum. When such testicles do descend into the scrotum they do so at the expense of an undue elongation of their mesentery during their passage through the inguinal canal.

Recently Mr. J. W. Dowden⁴ has described several cases similar to those figured here; a case is also well described by Mr. Edington.⁵ Dr. Grünert⁶ gives the details of one case and a summary of 22 others. More recent additions to the continental literature will be found in the accounts given by Dr. Heinrich Mohr⁷ and Dr. Hugo Klinger.⁸ The left testicle is apparently more frequently the site of torsion than the right but as the side is not always given full statistics are not available. In the present cases two were on the right and one on the left side. The extent of the torsion varies; it is frequently 360°. The twist is commonly towards the mid-line of the body, the globus major of the epididymis turning inwards and downwards. The majority of cases occur at or just before puberty.

Littlehampton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF PUERPERAL SEPSIS DUE TO THE BACILLUS COLI COMMUNIS.

BY A. KNYVETT GORDON, M.B. CANTAB.,
LECTURER ON INFECTIOUS DISEASES IN THE UNIVERSITY OF MANCHESTER.

THE patient, a primipara, was admitted to Monsall Hospital, Manchester, on Dec. 6th, 1905, as a case of puerperal sepsis. She had been confined on Nov. 29th, a midwife only having been in attendance. Apparently the labour was normal and of short duration. On the fifth day after confinement she is stated to have had a rigor and on the sixth day the temperature was 102° F. Notwithstanding this, a medical man was not called in until the seventh day, when he at once notified the case for removal to hospital. On admission, the patient was apparently moribund; she was almost entirely comatose and obviously was suffering from intense septicæmia; there were marked anæmia and extreme abdominal distension. The uterus reached to the level of the umbilicus and was soft and flabby. There was a slight amount of foetid purulent vaginal discharge. The leucocyte count was 10,731. The patient was anaesthetised at once and examined in the operating theatre; cultures were taken from the interior of the uterus. There was a small tear in the perineum and also a slight amount of laceration of the cervix. The uterus was dilated and its walls were extremely thin and friable. Beyond some undue roughness of the placental site and general endometritis nothing abnormal was found. The whole endometrium was carefully removed with a sharp curette down to the muscle and the raw surface was rubbed with undiluted iodoform. As the uterus did not show any signs of contraction after the curetting a douche at a temperature of 120° was administered, but this also produced no reaction. The uterus was packed with 10 per cent. iodoform gauze. 100 cubic centimetres of polyvalent antistreptococcal serum, prepared from puerperal cases only, were administered. On the next day the patient was markedly worse; the temperature was 105° and there was a rigor lasting for 20 minutes. In the cultures nothing whatever but bacillus coli communis was found. Accordingly

⁴ J. W. Dowden: Torsion of the Testicle, Brit. Med. Jour., April 25th 1905.

⁵ Mr. Edington: THE LANCET, June 25th, 1904, p. 1722.

⁶ Dr. Grünert: Torsion des Samenstranges, Münchener Medizinische Wochenschrift, No. 43, 1904, p. 1912.

⁷ H. Mohr: Ibid., No. 43, 1904, p. 1913.

⁸ Hugo Klinger: Ibid., Band III., 1905, p. 353.

100 cubic centimetres of serum prepared from a horse which had been injected with five pure cultures of bacillus coli communis (all of which had been obtained from cases under my own observation) were administered. The effect was most marked; on the next day the temperature had fallen, to 100° and the patient was obviously much better; consciousness had returned and the tongue was cleaning, and she expressed a desire for solid food. From this point she made an uninterrupted recovery and was discharged from hospital on Jan. 10th, 1906. There was then no sign of pelvic inflammation and the uterus was freely moveable and of normal size. The patient was well and strong.

I have elsewhere pointed out that bacillus coli infection, apparently subsequently to, and not at the time of, delivery is more common than is perhaps usually supposed. In this case it was obvious that the midwife was responsible for the infection, and the length of the incubation period—four days—is in favour of infection having occurred by contact between dirty clothes and the unprotected external genitals subsequently to delivery, rather than from manual examinations at the time of birth.

I have recorded this case as I have never previously met with a case in which bacillus coli was the only organism found and in which the reaction to this serum was so well marked, though I have frequently given it, along with anti-streptococcic serum, to cases in which both organisms were present. In this case anti-streptococcic serum was administered empirically, as I thought it best not to wait for the result of the cultures. I should add that the patient's blood was examined bacteriologically before the operation, 20 cubic centimetres being abstracted from the basilic vein, but it was found to be sterile. Both sera were prepared by Dr. Dawson, the director of the Wellcome Physiological Research Laboratories.

Manchester.

ENLARGED GLANDS OF THE NECK SUCCESSFULLY TREATED BY THE X RAYS.

By MILWARD E. DOVASTON, M.R.O.S. ENG., L.S.A.

THE patient was a girl, 18 years of age, whom I first saw in September, 1904, giving a history of an attack of scarlet fever in May, 1900, followed in a few months by gradual swelling of the glands of the right side of the neck. After pursuing several methods of treatment an operation for removal was undertaken in 1902. Early in 1903 the glands on the left side of the neck became enlarged in the same manner as the right and remained so until she came to me. She then had a conglomerate mass of enlarged glands, varying in size from that of a walnut to that of a hen's egg, extending from the angle of the jaw on both sides and meeting under the chin. They were hard, elastic, and moveable and diminished in size from above downwards. On the right side of the neck were two downards. One eight inches long, horizontally and another five inches long vertically, where removal had been attempted. There was no history of tuberculous disease obtainable. Treatment with the x rays was begun on Sept. 26th, 1904, and continued until July, 1905. The exposures were given for the first two months four times a week, afterwards three times, and the last five months twice a week. The improvement was at first evident in the disappearance of the tissues binding the glands together, after which the individual glands became more definite. The glands themselves then gradually lessened and eventually disappeared, leaving a perfectly formed neck on either side which has remained so up to Feb. 1st, 1906.

Hendon.

1 Public Health, December, 1905.

THE ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND.—The annual dinner of this association will be held at the Trocadero Restaurant, London, W., on Feb. 23rd at 7 for 7.30 p.m. Mr. C. St. Aubyn-Farrer, the President, will occupy the chair. The President of the Royal College of Surgeons of England and the President of the Royal College of Surgeons of Edinburgh have signified their intention of being present. The honorary secretary of the dinner committee, Dr. E. N. Féré, 12, Northampton-square, London, E.C., will be pleased to give further particulars.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et nobiliorum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORAGAST De Sed. et Caus. Verb., lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE PRESENTING THE SYMPTOMS OF GASTRIC ULCER WHICH FOLLOWED THE INGESTION OF AN IRRITANT.

(Under the care of Dr. R. G. HEBB.)

For the notes of the case we are indebted to Dr. Frederick W. Price, medical registrar.

A young woman, a housemaid, 21 years of age, was admitted to Westminster Hospital under the care of Dr. R. G. Hebb on Nov. 20th, 1905, complaining of pain in the stomach and vomiting of blood. On inquiry the following history was obtained. The patient had been subject to occasional attacks of bronchial catarrh until she reached the age of 14 years; otherwise she had always been healthy. 18 months before admission she sustained a sprain of the left wrist, for which she consulted a medical man, who prescribed an external application. Owing to a mistake the patient swallowed an ounce of the fluid three times a day for nearly two days. Immediately after taking the first dose a dry feeling in the throat was experienced, accompanied by a burning and prickling pain, and soon followed by a painful sense of constriction in the throat and gullet. Vomiting quickly supervened, the vomit being tinged with blood. The patient suffered from severe colicky pains in the abdomen which were worse on pressure. The muscles of the abdomen were tense and there was great thirst. These symptoms recurred after each dose of the irritant; the bowels became constipated and micturition was painful. The tongue was coated and the breath was offensive. The vomiting, abdominal pains, and constipation continued after the poison was stopped. The patient was kept in bed for a fortnight, at the end of which period there was considerable hæmatemesis. All the symptoms had completely disappeared in four weeks but a week later the patient "caught a cold" and began to suffer from a pain occupying a small area in the epigastrium, with accompanying tenderness. Later the pain became more diffuse and in a few weeks' time it spread to the interscapular region. Its character varied, sometimes being sharp and at other times of a boring character. It was constant but was much worse a few minutes after taking food. A few days after the pain commenced the patient began to vomit almost immediately after each meal. The vomit consisted of food almost unaltered and of several ounces of bright red blood on each occasion. The pain was entirely relieved after the act of vomiting. The patient was fed by the bowel for a week, but the pain, tenderness, and vomiting of food continued for some time longer. Strict dietetic treatment was enforced, a complete recovery from the symptoms was made, and the patient remained perfectly well until May, 1905, when a precisely similar attack returned and responded to treatment in six weeks. The patient remained free from stomach symptoms until three or four weeks before admission, when vomiting of food commenced, accompanied by epigastric pain and tenderness and hæmatemesis three days later. These symptoms continued until admission to hospital. Since the swallowing of the poison the menstrual periods have been irregular and the patient has occasionally suffered from metrorrhagia, dysmenorrhœa, and leucorrhœa.

On admission, the patient was found to be a well-nourished young woman and had a moderately good colour. There was a fair appetite, the teeth were in fairly good condition, and the tongue was slightly furred. She was at once put on to rectal feeding and the nausea and vomiting ceased, but about ten minutes after each injection there was a pain in the epigastrium, spreading to the back, which was much aggravated by movement. There ite and

localised tenderness in the epigastrium. There was no evidence of dilatation of the stomach or of enlargement of the liver. Nothing abnormal was discovered on physical examination of the heart or of the lungs. The urine was acid, had a specific gravity of 1020, contained a deposit of urates, and was free from albumin. The usual treatment of gastric ulcer was continued and the patient left the hospital on Dec. 2nd free from pain and much improved in general health.

Remarks by Dr. PRICE.—It seems clear that this was a case of gastric ulcer which was caused by, and followed soon after, the ingestion of an irritant. I am much indebted to the kindness of Dr. Hebb for being allowed to publish this case.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

UNUSUAL CASE OF LIVER ABSCESS; DEATH.

(Under the care of Mr. J. BELL.)

THE patient, a Chinese, aged 49 years, was admitted to hospital on August 25th, 1905. He looked very wasted and stated that he had been ill for over a month with fever but no very definite account of his illness was obtainable. All the internal organs seemed healthy, save that the liver dulness was slightly increased downwards. The tongue was very dry and furred, the urine was normal, and the temperature was subnormal. There were a number of purpuric spots of various sizes all over the body. A blood count taken by Lieutenant R. M. Ranking, R.A.M.C., was normal. The patient continued in much the same condition for a few days, obviously getting weaker all the time, and on the fourth day his temperature from being subnormal suddenly rose to 104° F. in the evening. The purpuric spots increased in size and in number and slight diarrhoea supervened, the stools being acholic, but no amœbæ or tubercle bacilli were found microscopically. The tongue continued to get drier and more furred. On the sixth day he had a rigor with a rise of temperature to 104°. The liver was found to be increased downwards, but was not tender. An ill-defined swelling extended on the right side from the middle line to the mid-axillary line. This swelling had a peculiar emphysematous feeling heard as loud friction sounds by the stethoscope. Aspiration over the dull and resonant areas gave exit to air and a little blood. The blood count gave 14,000 white cells per cubic millimetre. Jaundice now came on which rapidly increased to the time of death, which occurred on Sept. 5th, 11 days after admission. Aspiration of the area of liver dulness was negative as to pus. On the day following the rigor the temperature was subnormal all day; it rose on the next day to 102° and then continued subnormal till the end.

Necropsy.—At the post-mortem examination all organs were healthy save the liver, which was increased in size, extending two fingers' breadth below the costal margin. In the right lobe was a large well-defined mass of about the size of a large orange, extending to within half an inch of the surface, the mass being composed of thick cheesy material. Behind this and continuous with it was a small abscess cavity of about one-eighth of the size of the mass. The lining membrane of the abscess and the cut surface of the mass teemed with living amœbæ. The large intestine was quite normal and showed no signs of old or recent dysentery.

Remarks by Mr. BELL.—This was a most puzzling case. The absence of amœbæ in the stools or of any history of dysentery negatived liver abscess, more especially as the liver was not much increased and no pain or tenderness was at any time present. The advent of the ill-defined swelling in the abdomen with emphysema suggested the possibility of an abscess due to ruptured duodenal ulcer, the abscess being shot off by adhesions. Nothing was found post mortem to account for this peculiar crackling which none of us had heard of or met with before. The ingestion of such a large abscess is most unusual, if not the first of its kind, and would have made it impossible to treat the case if it had been diagnosed as the pus was quite solid. Was this an attempt on the part of nature to cure the case? Presumably the amœbæ reached the liver without first attacking the large gut—a most interesting fact.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

The Bacteriostatic and Agglutinative Properties of the Serum of Goats inoculated with Typhoid Cells, etc.—The Fatty Change in the Liver produced by Ligature of the Hepatic Artery.—Immunisation between Bacillus Pertussis and Bacillus Pseudo-tuberculosis Rodentium.—Natural Occurrence of Weil's Disease in the Guinea-pig.—Streptococcal Malaria.

A LABORATORY meeting of this society was held on Feb. 6th at the Lister Institute, Dr. C. J. MARTIN being in the chair.

Dr. ALLAN MACFADYEN made a communication upon the Development of Agglutinins and Bacteriolyins in the blood of animals (goats) which had been treated with typhoid cell-juices. It was shown that the agglutinins did not stand in a quantitative relationship to the protective substances present in the blood. The agglutinins were not therefore a reliable index of the immunising value of an antityphoid serum.

Dr. F. A. BAINBRIDGE and Mr. J. B. LEATHES read a communication on the Effects of Obstructing the Blood-vessels supplying the Liver. They said that it was possible by the artificial injection of either the hepatic artery or the portal vein to inject the whole capillary network of the liver lobules. There was reason to believe, therefore, that the arterial blood supplied not only the connective-tissue elements but also the cellular elements of the liver. In cats, ligature of the hepatic artery and of all the visible arteries running to the liver in the gastro-hepatic omentum caused death within 24 hours. Ligature of the hepatic artery alone was not fatal. The ligature was followed by a great increase of fat in the lobules (as observed histologically). The fat was for the most part confined to the inner zone of the lobules and was most abundant in livers examined a day or two after the operation; it gradually decreased in amount and at the end of a month the liver again presented a normal appearance. Recovery was doubtless due to the opening up of anastomotic channels and to gradual restoration of the supply of arterial blood. Ligature of a branch of the portal vein supplying one lobe of the liver was followed by the destruction of many cells in the inner zone of the lobules and later by considerable atrophy of the lobules, associated with very definite fibrosis of the interlobular connective-tissue. There was at first some increase in the amount of fat present (microscopically), but the change was very slight in comparison with that produced by arterial obstruction. Chemical analysis of a lobe of the liver removed at the time of the operation and of the rest of the liver some days after the operation showed that the actual amount of fat was not increased after tying the hepatic artery. The increase of fat observed microscopically did not indicate a real increase of the fat present in the liver. It was improbable, therefore, that either fatty infiltration of the liver from without or true fatty degeneration of proteid had taken place. They suggested that the apparent increase of fat was the result of the autolysis of very complex molecules made up of a fatty body normally bound up with proteid or other bodies. During health these combined fats could be detected microscopically, but when the nutrition of the cells was impaired by lessening their supply of oxygen these complex bodies broke down to such an extent that the fat was set free and became recognisable by ordinary histological methods. The fat appeared in the centre of the lobule which received the smallest supply of oxygen. The fatty change in the liver in anaemia and other conditions of malnutrition might possibly be accounted for in the same way. That the oxygen supply was the essential factor was indicated by the absence of fatty change after ligature of a branch of the portal vein.

Dr. ALFRED T. MACCOWKEY made a communication to the effect that by inoculating guinea-pigs with repeated and increasing doses of the bacillus pseudo-tuberculosis rodentium (Pfeiffer) it was possible to protect them against a subsequent inoculation of virulent bacillus pestis. Of 17 guinea-pigs immunised with bacillus pseudo-tuberculosis rodentium (Pfeiffer) not one succumbed to an inoculation with virulent plague bacilli, while of 1 control eight died from plague.

Dr. J. E. LEDINGHAM recorded a case of Acute Infective Jaundice in the Guinea-pig. The pathological changes in the organs were similar to those described in fatal cases of acute infective jaundice (Weil's disease) in man and birds. From the liver a bacillus was isolated having the morphological, cultural, and pathogenic properties of organisms of the proteus group which were first isolated by Jaeger in cases of Weil's disease.

Mr. L. NOON showed specimens of *Sarcocystis Muris*, a sporozoan parasite described first by Miescher in 1843 and now classified with the sarcosporidia. Theobald Smith was the first to succeed in transmitting it experimentally from mouse to mouse by feeding with infected muscular tissue. Others had failed to infect man or carnivora with the allied parasites of sheep and swine. Smith had also followed its development within the striped muscle fibre, up to the mature stage when the Miescher's tube was found to contain crescentic sporozoites. The sporozoites corresponding to the gymnosporidia of other sarcosporidia showed in films stained with Giemsa's stain a nucleus with red chromatin network, and the protoplasm blue with many round dull red granules at one pole. No forms were found which resembled the ohamydospores of other sarcosporidia in having a cuticle and striated polar body. A second life-cycle was unknown. Laveran had obtained a toxic extract from the sarcocystis of sheep which killed rabbits in eight hours with symptoms of cholera. The attempt to repeat this with sarcocystis muris had failed so far. The investigation was being continued.

OPHTHALMOLOGICAL SOCIETY.

The Treatment of Detachment of the Retina.—Acute Edema of the Eyelids.—Septic Thrombosis of the Cavernous Sinus.—Bitemporal Hemianopsia.—Exhibition of Cases.

A MEETING of this society was held on Jan. 25th, Mr. PRIESTLEY SMITH, the President, being in the chair.

Dr. A. M. RAMSAY read a paper on the Treatment of Detachment of the Retina. The paper was based on a record of 50 consecutive cases of detachment of the retina treated in the Glasgow Ophthalmic Institution during the four years ending Oct. 31st, 1905. The active treatment consisted in subconjunctival injections of from five to 20 minims of 1 in 2000 bichloride of mercury with 8 per cent. chloride of sodium solution, the severe pain that always followed being mitigated by the addition of a few drops of 1 per cent. cocaine solution. The injection was repeated as often as might be necessary, at intervals of from four to six days, and if no decided improvement showed itself within a fortnight free diaphoresis was induced by the subcutaneous injection of from one-eighth to one-quarter of a grain of pilocarpine, this alternating with the subconjunctival injections. If the site and character of the detachment were deemed favourable the subretinal fluid was always evacuated by scleral puncture. The patient was kept prone in bed with his eyes bandaged and every effort was made to improve his general well-being by careful attention to diet and to the action of the bowels, kidneys, and skin. Marked chemosis of the conjunctiva was essential and when the reaction to the subconjunctival injections was absent or ill-marked from 1 to 2 per cent. of dionine was added to the bichloride and chloride of sodium solution. Of the 50 cases treated ten showed a decided improvement and 13 a moderate improvement, though of the former group five, and of the latter group two, relapsed at intervals, varying from two weeks to four years. The more recent the detachment the more favourable the prognosis but the pathological antecedents of the affected eye were more important than the duration of the condition. Failure was the rule in all cases marked by a seriously degenerated choroid, a pupil sluggish to mydriatics, a much diminished tension, and sluggish to separation. The method of treatment outlined was simple, applicable to all cases, and, so far as Dr. Ramsay's experience went, never did any harm.—Mr. H. E. JULER referred to some cases of Galizowski in which posterior sclerotomy produced striking results though he had not seen them repeated and quoted a case which emphasised the importance of determining between simple detachment and that accompanying a new growth.—Sir A. ORTCHETT welcomed such a candid and truthful exposition of the subject and in spite of conflicting results he was strongly disposed to attempt the treatment recommended by Dr.

Ramsay.—Mr. SIMEON SNELL referred to cases submitted to various methods of treatment, the best of which recovered after tapping, though the results generally were unfavourable.—Mr. H. SECKER WALKER found greater benefit from subconjunctival injections of cyanide of mercury than from any other mode of treatment.—The PRESIDENT said that in cases of old standing, associated with myopia, there was nothing to do. He recommended the recumbent position and pressure with puncture and the subconjunctival injections, but results varied. New growth might be diagnosed by enlarged vessels in the neighbourhood of the detachment and by means of transillumination.

Mr. SNELL related a case of Acute Edema of the Eyelids on both sides in a pork butcher, aged 48 years. The day before he had been dressing a pig and the gut, at a part which contained a lot of worms, burst over his face. Immediately irritation was felt and the lids commenced to swell. He was seen three hours later by his medical man when the condition was the same as it was 22 hours later. The eyelids on both sides were intensely oedematous, projecting as a large semi-translucent swelling, leaving only a chink between them. There was considerable chemosis of the conjunctiva. The next day it was learnt that the swelling had greatly subsided and 24 hours later had disappeared, only some redness of the conjunctiva remaining. Experiments with the worms subsequently caused no irritation in guinea-pigs.

Mr. SNELL also described a case of Septic Thrombosis of the Cavernous Sinus. On May 1st, 1895, a young medical practitioner pricked a small vesicle on the left side of the upper lip with a gold scarfspring which had been used previously to open an abscess and which was thought to be clean. On the next day there were redness and swelling and towards the evening the patient had to give up work and retire to bed. The following day the condition of the upper lip was worse and further progress was noted on the fourth day. On the fifth day the blush extended over the left cheek towards the orbit. On this side proptosis occurred with swelling of the conjunctiva and edema of the eyelids. Later, the right eye followed precisely the same course, the protrusion being even more marked. Interference with the movements of the eye was complete, only becoming so on the left side two days before death. There were also palsy of the right facial nerve and deafness on the right side. Another symptom was dulness with evidence of effusion on the right side of the chest. The patient died 14 days after the commencement of the attack, his mind having been unaffected throughout. Mr. Snell remarked that the initial lesion was clearly the condition of the lip which the medical attendants had considered to be a malignant facial carbuncle. No post-mortem examination was allowed.—Dr. D. J. WOOD cited three cases of a similar nature. Antitoxic serum appeared to be the best remedy.—Mr. J. H. FISHER stated that the great bulk of cases resulted from infection of the lateral sinus from otitis media, though occasionally this originated in the face. Treatment was very unsatisfactory as compared with jugular vein infection.

Dr. WOOD related a case of Bitemporal Hemianopsia. The patient, a man, aged 33 years, had suffered for more than a year with frontal headache, failing vision, and loss of memory. His better eye, the right, had become the worse, $V = \frac{1}{4}$ (—4 D.), the left $V = \frac{1}{16}$ (—15 D.), and he had bitemporal hemianopsia with contraction of field and loss of fixation point in the right. Mentally he was dull, repeated himself, and forgot what he was going to say and became annoyed, and there was marked delay in answering questions. The pupils were sluggish and patellar reflex was nearly absent. During 52 days' observation in hospital he steadily grew worse mentally so that it became impossible to keep him there on account of his foul language at night and filthy habits. His friends refused to let him go to an asylum, and, though he had ceased to recognise them or to talk rationally, took him home. After another 62 days, during which there was little change except that he contracted "influenza" and developed a bad cough, he suddenly sat up in bed and began to ask sensible questions—became, in fact, suddenly sane. He rapidly improved and when seen some months later was entirely recovered mentally. His right eye was divergent, quite blind, and exhibited optic atrophy. The left eye had improved ($V = \frac{1}{4}$) and his field was slightly larger. The left pupil was active, patellar reflexes were good, but he had no recollection of his sudden recovery was good, but he had no recollection of anything during the previous three and a half months. The case was thought to be one of cyst of the pituitary body,

which during a fit of coughing had ruptured through the attenuated bone into the pharynx or nasal cavities, though nothing of this sort was noticed by the friends and the patient himself was unconscious till the actual relief of pressure had occurred.

The following cases were shown:—

Mr. A. S. MORTON and Mr. G. COATS: A case of Subconjunctival Cysticercus.

Dr. R. E. BICKERTON: (1) Supposed Growth of Choroid; and (2) Anophthalmos.

Mr. L. V. CARGILL: Orbital Tumour.

LIVERPOOL MEDICAL INSTITUTION.

A Case of Haemorrhagic Pancreatitis.—Posterior Vertebral Tuberculosis.—Curies of the Atlas and Axis.—Cardiac Hypertrophy in Graves's Disease.—The X Ray Diagnosis of Renal and Ureteral Calculus.

A MEETING of this society was held on Feb. 1st, Mr. FRANK T. PAUL, the President, being in the chair.

Dr. F. W. BAKER YOUNG reported a case of Acute Haemorrhagic Pancreatitis. The patient was a man, aged 30 years, who was addicted to alcohol. He was taken ill while at work, walked home, a distance of 50 yards, and died within 45 minutes of the onset of symptoms. At the necropsy the body and tail of the pancreas were found to be enlarged and infiltrated with fluid blood; the head of the organ was also involved but not to the same extent. There were blood-stained fluid in the lesser sac of the peritoneum and an ecchymosis on the left kidney over the site of its relation with the body of the pancreas. No other lesion was found that could account for death. The following points were of special interest: (1) the rapid onset and rapid termination; (2) the patient's age; (3) absence of vomiting; (4) absence of pain; (5) the fluid state of the blood, no clots having been found even 48 hours after death; (6) the engorgement of the abdominal veins with fluid blood; and finally, the medico-legal aspect of the case—had the pancreas not been examined the cause of death could not have been stated.—Dr. WILLIAM CARTER drew attention to the similarity of the symptoms in death from irritant poisoning and from haemorrhagic pancreatitis respectively, quoting the following from Dr. A. J. Chalmers's monograph on "Pancreatitis in Ceylon": "Especially I desire to draw attention to the legal post-mortem form where no mention of the pancreas is to be found. I think that this should be rectified and that in all legal post-mortems careful note should be made of the condition of the pancreas."

Mr. R. W. MONSARRAT read a short paper on Posterior Vertebral Tuberculosis. After mentioning the primary seats of the disease as it has been found in the vertebral arches he related two cases. In the one the disease involved the transverse process, pedicle, and lamina in the dorsal region; in the other it was confined to the lamina of the fourth cervical vertebra on the left side. Both cases were complicated by abscess and the cervical case also exhibited paralytic phenomena beginning on the left side and subsequently extending to the right and involving the bladder function. The paralysis in the second case rapidly disappeared after laminectomy and the clearing out of a mass of granulation tissue from the spinal canal.

Dr. T. R. GLINN related a case of Curies of the Atlas and Axis with displacement of the atlas backwards in which recovery took place, the patient ultimately dying from internal hydrocephalus. The curies was associated with post-pharyngeal abscess and the condition being recognised, the patient, a girl, was placed on a bed raised at its upper end, her head being fixed by a bandage to a rail, and the body extended by a weight attached to the feet. All her limbs and the bladder became paralysed and respiration embarrassed. Atropine proved valuable in relieving respiratory trouble. After many weeks she recovered, the last symptoms, those pointing to descending lateral sclerosis, nearly passing away. She entered service and remained well for several weeks but was readmitted comatose. After death great distension of the lateral ventricles was found. The odontoid process had slipped backwards and upwards; the cord was compressed to the size of a goose quill; and the axis and atlas were partly destroyed and ankylosed together. The hydrocephalus was probably caused by the displaced odontoid process thrusting the

medulla upwards against the cerebellum and closing Magendie's foramen.

Dr. T. R. BRADSHAW showed a case of Cardiac Hypertrophy in Graves's Disease. The patient was a girl, aged 16 years, with Graves's disease incompletely developed. There had been palpitation and suffocative sensations for a year. The most prominent sign was hypertrophy of the right ventricle, for which none of the common causes were present. Lately, slight enlargement of the thyroid had become apparent. Dr. Bradshaw commented on the rarity of demonstrable cardiac hypertrophy in Graves's disease, a fact pointed out long ago by Trousseau.

Mr. C. THURSTAN HOLLAND read a paper on the X Ray Diagnosis of Renal and Ureteral Calculus. The paper was divided into three portions: the positive, doubtful, and negative evidence of calculi. Illustrative cases were cited and lantern slides were shown to prove the value of the positive and the difficulties of the doubtful diagnosis. The paper was based on a series of 76 cases, in 22 of which calculi were shown by the x rays. The value of the negative evidence was discussed and it was pointed out that too frequently reliance was placed on plates which were not good enough to warrant a negative opinion. If plates of the proper quality were obtained, then, and then only, was negative evidence to be relied on. The value of a pressure-tube apparatus in taking these radiographs was also dwelt upon.—The PRESIDENT referred to the valuable aid in diagnosing lesions of the kidney afforded by the urine separator and radiography. Liverpool was fortunate in possessing an exceptionally skilled specialist in each department as he had had many opportunities of testing, and though at first he had not been prepared to give an unqualified acceptance to the results obtained by these methods experience had assured him that in proper hands they were thoroughly trustworthy and of the utmost assistance.—Dr. J. HILL ABRAM said that one of Mr. Holland's cases was a man, aged 43 years, who had been sent to him for pain in the right hypochondrium and loin. There had never been any renal colic or hæmaturia and nothing could be detected by physical examination. On one occasion Dr. Abram had found a few pus cells in the urine. Mr. Holland's report was decisive and Mr. Rushton Parker successfully removed two stones from the kidney. It was an enormous gain to have had an advance in their methods which would enable physicians to recommend surgical interference with much lighter hearts than in the past.—Mr. W. THRELWALL THOMAS alluded to the great service which the x rays in Mr. Holland's hands had been to him in many cases of stone of the kidney—even in a case of a large kidney filled with pus and in a very stout patient—in confirming the diagnosis. He would in every case of suspected calculus call in an expert radiographer for confirmation.—The following gentlemen also took part in the discussion of the paper: Mr. RUSHTON PARKER, Dr. NATHAN RAW, Sir JAMES BARR, and Dr. T. WALBY.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 26th, Dr. J. Lindsay Steven, the President, being in the chair.—Professor Sarneca Gemmell showed a case of Pseudo-hypertrophic Paralysis in an adult. Weakness in the legs with dull pain in the calves and lumbar region began four years ago when the patient was 19 years of age. In nine months he was forced to give up work and under the orders of his medical adviser remained in bed for six months. He was then admitted to the Edinburgh Infirmary where he was treated by massage, electricity, and Turkish baths for 16 weeks. On dismissal he was sufficiently well to resume work for 15 months but the symptoms returned and by Oct. 21st, 1905, when he was admitted to the Glasgow Western Infirmary, a walk of 200 yards exhausted him. There was no trace of any similar disease in his family. His condition on admission was as follows: The deltoid, biceps, and triceps were prominent. The forearms were large. The scapulae projected. The infrascapulari were distinctly enlarged. Below there was distinct atrophy of the erectors spinae. The gluteal muscles were small and flabby. The thighs were straight and atrophic. The calves were large and firm and measured 15 inches. Tested individually the muscles of the body were greatly weakened. They all reacted to the faradic and galvanic currents but required a current rather stronger than normal. The knee-jerks were obtained with difficulty. Sensation and heat sense were unimpaired. The gait was of the waddling type and the head was ducked forwards and downwards with each step. When

rising he turned over on to his left side, raised himself on his knees, then on his toes and hands, and gained the erect position by climbing up his thighs. He had been treated with massage, exercise, and the high frequency current with great benefit.—Professor Gemmell also showed a case of Friedreich's Ataxy in a boy, aged 16 years. There was a history of injury to the head six years ago. After this his power of writing became defective and was now very unsteady. Walking had been unsteady for six months and now his hands were unsteady. His habitual posture was one of kyphosis. His gait was very unsteady. He reeled and elevated his feet too high and stamped them down heel first. He could not walk along a plank or stand with feet together and eyes shut. The tongue was tremulous. His speech was slurring but had no staccato element.—Professor R. Muir demonstrated four cases of Cirrhosis of the Liver with Primary Cancer. He said that the association was not casual but etiological. In cirrhosis there were a degeneration of liver cells from pressure and, as a reparative process, a hyperplasia of other liver cells. This hypertrophy appeared sometimes to precede the beginning of cancer and the cancer arose from liver cells, often at multiple foci, as if the compensatory proliferation had passed its usual bounds and developed into a cancerous growth. Clinically such cases sometimes were associated with a rapid and an extensive ascites from a growth of cancer cells obstructing the portal vein.—Dr. Renton showed: 1. A case of Coxa Vara after operation. He had removed a wedge of bone from the femur below the trochanter on each side. The bone was then fractured outwards and the legs were put up in a double long splint. After union there was a gain of two inches in length and the patient could sit down without crossing his legs. He could now draw up his legs freely. 2. A boy, aged ten years, who had Gastro-enterostomy performed for Stricture of the Pylorus. The stricture had resulted from an ulcer of the stomach after enteric fever. The ulcer had caused hemorrhage and great dilatation of the stomach and had led to emaciation. His weight on admission was 2 stones 13 pounds and was now 4 stones. 3. A case of Cholecystocolotomy where a large stone had been impacted in the common duct, causing contraction and fistula. He had joined the gall-bladder to the colon with a Murphy's button which was passed on the eighteenth day.—Dr. Beatson showed: 1. A patient with Bilateral Ankylosis of the Hip and Spastic Condition of the Muscles. The gait in this case had suggested coxa vara but this condition and congenital dislocation had been eliminated by skiagraph. Under an anæsthetic it was found that the ankylosis was complete; abduction and all movement in an extended position were entirely absent. The muscles of the thigh were hypertrophied and spastic. There was a history of injury 11 years ago. One brother had tuberculous disease of the hip and a sister had never been able to walk. Dr. Beatson regarded the condition as a rheumatic affection. 2. A case of Cicatricial Keloid: one of the size of a walnut in the shoulder which arose from an abrasion caused by friction of the patient's braces, another behind the ear following a burn, and a third in the lumbar region from an acne pustule. X ray treatment had not been successful.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF MEDICINE.—A meeting of this section was held on Jan. 19th, Sir William J. Smyly, the President, being in the chair.—Dr. W. G. Smith opened a discussion on Empyema with especial reference to its Etiology and Diagnosis. He said that as to the nature of the effused fluids, it was sufficient to group them into (a) sero-fibrinous and (b) purulent. Most pleuritis were caused by infective agencies. Three points might be noted—namely (1) the serious significance of the tubercle bacillus; (2) the comparatively favourable outlook of even purulent effusions when due to the pneumococcus; and (3) the serious and frequently fatal character of cases due to acute streptococcal invasion. In regard to physical diagnosis, half a pint of fluid was about the smallest quantity that could be recognised. Percussion was more valuable, diagnostically, than auscultation. Bronchophony might be heard through a considerable mass of pleural fluid. Vocal fremitus might be normal, or even weakened, in acute pneumonia, and was often increased just above the upper limit of an effusion. Exploratory puncture was the most valuable and certain mode of detecting fluid.—Sir Thornley Stoker introduced the discussion on the Surgical Treatment of Empyema and gave the results of his own experience as to various methods. He laid great stress on the early drainage of the pleural sac and set aside as

quite out of date the use of aspiration. He strongly advocated that when thoracotomy was called for it should not be practised by intercostal incision but by removal of a portion of a rib. He claimed that this should be the routine method, as it gave room for digital exploration, avoided the pinching of drainage-tubes between the ribs, was free from risk of bleeding, permitted the discharge of the large masses of lymph usually found, and could be practised with great rapidity. He advocated the performance of thoracoplasty at a period anterior to that at which it was often resorted to, and claimed that when done in time without delaying to the last moment, and when performed in a certain way, it was not a very serious proceeding and was usually a very successful one. The U shaped flap should be avoided and the portions of ribs operated on should be removed through straight incisions parallel to their axes. One incision sufficed for the resection of portions of as many as three ribs. In his practice he had not found removal of the periosteum necessary: it increased the length and danger of the operation and the membrane caused no ill effects if left behind. Irrigation of the pleural sac was to be avoided in most cases and only resorted to if factor was present or the discharge was unduly persistent. It was often dangerous to life by causing collapse or convulsions.—Dr. Henry C. Earl read a short paper on the Bacteriology of Empyema. He pointed out the importance for prognosis that bacteriological examinations have, particularly in cases of pneumococcal and streptococcal origin. He also discussed the difficulty of diagnosis of the nature of tuberculous cases and the value to be attached to the sterility of an effusion.—Sir John W. Moore read notes of two cases illustrative of the difficulties which attended the differential diagnosis of empyema or pyothorax and hypophrenic abscess. The first patient was a woman, aged 30 years, in whom the physical signs led to a diagnosis of right empyema. Paracentesis was performed and 170 ounces of most offensive pus were drawn off. The patient sank, and at the necropsy the seat of suppuration proved to be altogether below the diaphragm, constituting a hypophrenic abscess and involving the liver also. The starting point of all the mischief was probably a perforating gastric ulcer, in connexion with which adhesive inflammation had occurred. The second patient, who was a man 52 years of age, suffered from cancer of the œsophagus. He complained of difficulty of swallowing, sharp pain in his chest, and spasmodic cough. Exploration of the right pleura showed a serous effusion. He subsequently grew worse and a syringe of stinking pus was drawn off from the right side in the seventh intercostal space. Mr. Taylor afterwards excised a portion of the right tenth rib, in a line with the inferior angle of the scapula, and evacuated an enormous collection of very foul smelling pus. The man died three days later, and the necropsy showed that a perforating cancer of the œsophagus had opened into the posterior mediastinum, thence reaching the right pleura and setting up a septic empyema. The examination of the abdomen revealed nothing abnormal.—Sir Arthur O'Hance, Dr. A. O. O'Sullivan, Dr. R. A. Hayes, and Dr. N. McIntire Falkiner also took part in the discussion.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held at Birmingham on Jan. 31st, the chair being taken by Mr. J. Quirke, the President.—Dr. O. J. Kaufmann showed a case of Myopathic Atrophy.—Mr. F. Victor Milward showed a girl, aged 21 years, on whom he had operated for Colitis associated with much Interstitial Infiltration. Six months previously she was taken to the General Hospital, having suffered for five days with abdominal pain and tenderness. A diagnosis of appendicitis was made, the symptoms exactly representing that disease. The abdomen was opened and the cæcum, appendix, and colon, as far as could be reached, were found to be in an acutely inflammatory state. The muscular and subserous coats were very greatly thickened by serous exudation and recent patches of lymph were present on the peritoneum. No pus, necrotic area, or ulceration was seen. No symptoms of enteritis were at any time present. Drainage was employed and the girl recovered in about a month and had since been well. The peculiarities of the case were the localisation of the complication to the large intestine, the absence of any breach of continuity, and the uneventful recovery which followed drainage.—Dr. J. Douglas Stanley showed a case for diagnosis. Mr. George Heaton showed: (1) a Kidney removed for a Ruptured Ureter; and (2) a patient from whom a Uteral Calculus had been removed.—Dr. J. F. H. Sargent showed a specimen of Diffuse Angeliomatos Condition

C. A. Leedham-Green showed a boy on whom he had operated some two years before for the relief of Severe Cicatricial Contraction of the Hand. As the result of a bad burn of the palmar surface of the right hand all the four fingers were strongly flexed so that it could not be opened and only the thumb was capable of movement. The operation consisted in the making of a deep transverse incision across the centre of each finger through the contracted skin and tissues until complete extension could be effected. In each case it was necessary to open the flexor tendon sheath, and in that of the two inner fingers the tendon itself had partially to be divided ere they could be completely extended. This forcible straightening converted the simple transverse incision into a large lozenge-shaped wound. To cover in this defect a large graft of the whole thickness of the skin was excised from the tegument over the biceps muscle and applied to the wound on each finger, the grafts being maintained in position by firm bandaging and splints. In each case the transplanted skin lived and healed without drawback. The hand was then persistently massaged for some months and the boy had now a perfectly restored hand with finger capable of the freest movement and showing no trace of the deformity and no tendency to contraction.—Dr. J. G. Emanuel showed a girl, aged 18 years, suffering from Cerebro spinal Syphilis, the symptoms of which had been noticed about eight months. She was taken for treatment on account of an unsteadiness in gait amounting to an actual reeling; in fact the neighbours were taunting her with being drunk. The onset of this ataxia in point of time coincided with the appearance of periosteal nodes on both tibia and of synovitis with effusion of both knee-joints. In addition there were typical syphilitic teeth, deafness in both ears, and kerato-iritis in each eye. To the ataxia were added signs of degeneration of the pyramidal tracts—viz., recently developed pes carus, increased tendon reflexes in the arms and legs, a tendency to ankle clonus, and the Babinski reflex was obtained once on the right side. There were no muscular weakness, no sensory disturbance, no bladder or rectal trouble, no optic atrophy, no nystagmus, no speech defect, and no mental deterioration. A point of special interest in the case lay in the fact that the patient had a brother, aged 35 years, presenting a very similar condition of ataxia combined with undoubted congenital syphilis.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. W. Campbell McDonnell, the President, being in the chair.—Dr. J. S. Risien Russell read a paper on Erroneous Signs in Cerebral Localisation. He said that there were two main considerations. 1. Where there were signs of the brain being affected but the disease was in another part of the body. Occasionally in cases of pneumonia they found a cerebral type. At first there were no signs in the chest and the cerebral symptoms were thought to be due to meningitis. A man sent into hospital for sunstroke was unconscious, had convulsions, rigidity, some head retraction, occasional squinting, but no optic neuritis or paralysis. Meningitis was diagnosed but he began to spit up some rusty expectoration and then developed physical signs in the left upper chest which extended. He died and post mortem there was lobar pneumonia but no meningitis. A child suffered from cerebral symptoms with complete coma, absent knee-jerks, squinting, some rigidity, and Cheyne Stokes breathing, but had no paralysis or chest symptoms. Signs of pneumonia did not appear for a week. In "meningism" there might be squinting, rigidity, convulsions, and absent knee jerks. Positive signs of meningitis were paralysis of cranial nerves and optic neuritis. Kernig's sign occasionally failed and had been present in cases other than meningitis. Babinski's sign had not failed so far. 2. Conditions in which there were signs of a lesion in the brain but the lesion was in another locality. A woman had left hemiplegia which was considered functional, but she had definite ankle clonus and extensor plantar reflex, also partial ptosis, and paralysis of accommodation and of convergence on the right side, hence her disease was organic and was considered to be due to a tumour of the right crus. Suddenly one morning she vomited and became unconscious and comatose, but there was no evident increase of paralysis of the right third nerve and of the left limbs. The urgent symptoms being considered due to a rapid increase of fluid in the ventricles and oedema of the brain performed but without relief. To relieve intracranial pressure she was trephined but again without relief, and she died. Post mortem the localisation was found to be

wrong, for the crus was absolutely free from disease but there was a large tumour of the meninges compressing the cortex and destroying the Rolandic region of the right cerebral hemisphere. This case was remarkable as there were no convulsions, which are the rule in cortical tumours. Hence cortical tumours need not necessarily cause convulsions; likewise tumours not cortical could cause convulsions. As a rule paralysis of the third nerve could be relied on for localisation; not so the sixth nerve. A nerve might be involved without being compressed by a tumour and the theory advanced was that the involvement was due not so much to increased intracranial pressure as to some form of neuritis set up by toxic influence. In diagnosing organic from functional disease the occurrence of ankle clonus and extensor plantar reflex was emphasised. The misleading signs referred to showed how rarely they could be absolutely certain as to cerebral localisation.—Dr. L. Darnò showed a specimen of an Appendix half an inch in length.—Dr. D. Ross showed a child aged 15 months suffering from Congenital Cerebral Deficiency. There were nystagmus, blindness probably due to optic atrophy, and almost constant protrusion of the tongue due to some spasm.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held on Feb. 2nd, when Professor F. J. Keeble read a paper on the Action of Anæsthetics on Lower Forms of Life. After referring to Claude Bernard's classical experiment to illustrate the action of chloroform on a pigeon, a frog, and a sensitive plant, the lecturer passed on to discuss various reflexes whereby plant sensitivity could be demonstrated. Chloroform in suitable strength could prevent a plant perceiving such a stimulus as the influence of gravity. When exposed to anæsthetic vapours plants lost their reflexes in an exactly similar manner to animals. Both ether and chloroform inevitably produced effects on lower plants, more especially on the streaming movements, the movements of cilia, and the throwing out of pseudopodia. A properly adjusted dose produced at first an extremely temporary acceleration of movement and growth, immediately followed by a retardation, and finally complete rest. The rest produced by ether was less permanent and less likely to be lethal than ensued in the case where chloroform was the anæsthetic vapour used. Bacteria, except in spore condition, could be killed by exposure to anæsthetic vapours and chemotaxis was profoundly altered. The rate of respiration was then referred to and the lecturer quoted the tubers of gladioli. After exposure to the vapour of ether for 24 hours the carbon dioxide produced by these tubers rose from 12.2 milligrammes to 57 milligrammes for the first day, only dropping to 40 for the third day. Cells in process of dividing when exposed to anæsthetic vapours had that process arrested as regards the protoplasm of the cell itself. The cell nucleus, however, remained unaffected by the doses employed. The lecturer then referred to the commercial employment of anæsthetics to force plants to bloom earlier and more profusely. Chloroform would do, but ether was better. Horse-chestnut buds could now be gathered off the trees, exposed to the vapour of ether (10 cubic centimetres of ether per litre of air at 17° to 19° C.) for 48 hours, and then kept in a room at the ordinary temperature. The result would be a generous production of flowers quite out of season. Discussing how the anæsthetic acted the lecturer said that it had been suggested that this was due to its action on the anti-growth enzyme whereby the growth enzyme freed from its antagonist had it all its own way. Finally, the lecturer referred to the toxicity of a poison depending on its solubility in lecithin.—In the subsequent discussion Dr. Edgar Willett, Dr. Dudley W. Buxton, and Dr. J. Blumfeld took part. The meeting concluded with a hearty vote of thanks to the lecturer.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting (the first meeting of this kind in the history of this society) was held on Feb. 2nd, Mr. L. A. Bidwell, the President, being in the chair.—Mr. Bidwell presented to the society a very tasteful badge to be worn by future presidents at the meetings of the society. The badge was accepted by Mr. F. Lawrence in the name of the society in suitable terms. Mr. Lawrence then invested Mr. Bidwell with the new badge of office.—The following members showed specimens, &c.—The President: A Stone formed round a Clinical Thermometer removed from the Bladder of a woman by Suprapubic Lithotomy; and sections of an unusual tumour of the Omentum removed by operation.—Dr. J. A. Conington

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. E. Ward being in the chair.—The following cases and pathological specimens were shown: Dr. O. Oldfield: Fibroid Tumour of the Uterus with a Small Lutein Ovarian Cyst.—Mr. W. H. Brown: Vermiform Appendix removed from the Cæcum on the left side after an attack of Inflammation.—Dr. E. F. Trevelyan: (1) A case of Hemiplegia with the Argyll-Robertson Papil (Cerebral Syphilis); and (2) a case of Obstructive Tuberculous Laryngitis in which laryngotomy was performed some two or three years ago. Much improvement had taken place.—Dr. A. Sharp and Dr. W. H. M. Telling: A case of Chronic Hypertrophic Subglottic Laryngitis, with Stridor since childhood.—Dr. A. G. Barrs: A case of Tuberculous Enteritis with Acute Destructive Joint Lesions.—Dr. Telling: (1) An early case of Anæsthetic Leprosy; and (2) a case of Diffuse Scleroderma complicating Raynaud's Disease.—Mr. H. Littlewood: Osteoma of the Middle of the Femur (patient and specimen were shown).—Dr. T. Wardrop Griffith: Cerebral Hæmorrhage from a case in which there were Hemiplegia and Hemianopsia.—Mr. R. Lawford Knaggs:

- (1) Bladder and Enlarged Prostate showing Enucleation; and
(2) Skiagrams illustrating different forms of Dislocation of the Knee.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.

—A meeting of this society was held on Feb. 5th, Mr. A. E. Cumberbatch, the President, being in the chair.—The following gentlemen were elected ordinary members: Mr. H. W. Fitzgerald Powell, Dr. J. S. Barr, Mr. E. S. Steward, Dr. A. K. Gordon, and Dr. H. J. Davis.—A short address was delivered by the President, and cases, &c., were shown by Mr. P. McL. Yearsley, Mr. Lawrence, Mr. Whitehead, Dr. Gray, Dr. Milligan, and Dr. J. Dundas Grant. Among the most interesting was the case of a boy, aged 17 years, shown by Mr. Yearsley. He complained of moderate deafness in the left ear, the tympanic membrane of which was dark blue in colour, that of the right ear being normal.—The discussion which followed failed to elicit any adequate cause for this curious anomaly.

Reviews and Notices of Books.

Histological Studies on the Localisation of Cerebral Function.

By ALFRED W. CAMPBELL, M.D. Edin., Pathologist to the Asylums Board of the County of Lancaster. (Published by aid of a subsidy from the Royal Society of London.) Cambridge University Press Warehouse. 1905. Medium 4to, pp. xx+360. Price 18s. net.

THE author in a modest preface sets forth his obligations to his loyal and helpful colleagues, to the generous treatment by the council of the Royal Society, and to Professor C. S. Sherrington "for counsel when in doubt, for encouragement when energy flagged, and for many kind offices." The means for the research have been supplied by the Lancashire Asylums Board and the research was conducted in its laboratory at Rainhill Asylum.

The introduction contains a modest claim, or rather anticipation, more than justified, we think, by the sequence, that this research will help to establish the value of histological work as an auxiliary force in the final settlement of that functional subdivision of the cerebral cortex at which he aims. Perhaps speculation, or rather imagination, led the way to so-called localisation of function. We have travelled far from the idea of one organ one function. Steadily the results of numerous converging lines of research in anatomy, histology, physiology, and pathology—human and comparative—are making less obscure the varied and intricate "thicket" of the cerebral cortex, while the facts of experiment and the still more stern and fateful results as shown by the diseased brain help to illumine the darkness. In this research the triad arranged for the study of the brain is (1) during development, (2) in conditions of disease, and (3) in the normal state, combining, therefore, the researches of embryologist, pathologist, and physiologist with the anatomist as an accepted and established quantity. In fact, a free and harmonious collaboration between workers in the several provinces is a necessary accompaniment to the satisfactory accomplishment of determining the extent of cortical localisation.

The scope of the work may be defined by indicating the titles of its chapters: Cell Lamination and the Arrangement of Nerve Fibres in the Cerebral Cortex; Pre-central or Motor Area; Postcentral or Sensory Area and the Intermediate Postcentral Area; Visuo-sensory and Visuo-psychic Areas; Temporal Lobe and the Auditory Areas; Limbic Lobe; Parietal Area; Intermediate Precentral Area; Frontal and Prefrontal Areas; the Island of Reil; and one on the Brains of Felis, Canis, and Sus, compared with that of Homo. Our congratulations are due to one who has pledged his energies to the apparently hopeless task of elucidating problems connected with mental disease and who has given us so excellent and thorough a memoir. It is pleasant to

read the historical considerations on "lamination" of the cerebral cortex, of the story of "what Gennari saw" in 1776 to use a modern phrase; but we must pass to Chapter III. to find an account of the line of Baillarger—an important stratification landmark in the cerebral cortex. Years intervene and we omit other historical facts until we come upon the statement of the "superlativeness" of the method of the "Frankfurt Professor"—i.e., the late Professor Weigert. The phraseology is somewhat Teutonic. We are glad to see a warm reference to the work of the late Professor Meynert of Vienna, who was "the first to indicate the existence of a great system of intergyral association fibres."

In 1901 Professor Sherrington and Dr. A. S. F. Grünbaum published their views that the topographical distribution of the motor area needed extensive modification. They employed a method of stimulation beloved of Kühne—the unipolar method—and discovered that the responsive area was confined to the precentral convolution and certain adjacent parts, another example of the value of a method. And here the author (p. 20) claims "that it is just as possible to define the area on the histological bench as on the operating table." Every part of the cortex has been subjected to the most careful microscopic study and in the text are many drawings of the results obtained, while the additional 20 plates afford a proof of the great labour spent on this monograph. We may add that there is a very full reference to the literature. This monograph should be read by anatomists, physiologists, and pathologists alike. Perhaps one of the most interesting summaries is that on the frontal lobe.

Criminal Responsibility. By CHARLES A. MERCIER, M.B. Lond., F.R.C.P. Lond., F.R.C.S. Eng. Oxford: The Clarendon Press. 1905. Pp. 232. Price 7s. 6d.

ALL crime being in part a problem in psychology it is fitting that the subject of criminal responsibility should be dealt with by the psychologist as well as the lawyer. Dr. Mercier is well qualified for this task, not only by special knowledge but also by reason of an exceptional power of lucid exposition. This work is written as a complement to the well-known treatise of Sir Fitzjames Stephen. It is in a sense a matter for regret that Dr. Mercier's book was not available when the distinguished author of the "History of the Criminal Law of England" wrote his treatise, for we can imagine his satisfaction on discovering, after a weary perusal of medical works, that here at last was a medical writer after his own heart.

Chapter I. treats of Responsibility, which is defined as "the quality of being rightly liable to punishment." All reference to law is purposely excluded in this definition; here, as elsewhere, the author concerns himself with the law as it ought to be rather than as it is. The triple aim of punishment—retribution, deterrent, and reform—is considered. The principal of these is still, and is likely long to remain, retribution. Dr. Mercier does not think it worth while to consider whether we should forego the retributive end of punishment, the proposal being, he considers, too remote from practicability. Happily, however, we do not experience an imperative desire for retaliation upon the offender in respect to all crimes, and the very suggestion that a process of reform should be applied to criminals implies a weakening of the primitive desire for retribution and the growth of a milder sentiment, under the influence of which it is to be hoped that the criminal will receive as much attention as the crime.

In a chapter upon Voluntary Action Sir Fitzjames Stephen's remark that a distinct conception of normal voluntary action is necessary in order to understand the meaning of compulsion and insanity is approved, and Dr. Mercier says: "I have been insisting for many years that the

morbid cannot be understood without a previous knowledge of the normal, but I do not know that I have gained many adherents." Surely this is an elementary fact upon which no insistence is needed. We hope Dr. Mercier's legal readers will think, as we do, that he has been engaged in a work of supererogation. The deficiencies and errors of Sir Fitzjames Stephen's definition of a voluntary action are exposed and the definition is improved upon, though it becomes rather cumbersome in the process. This chapter, which is largely a criticism of the views of the legal authority mentioned, is in itself sufficient evidence that a training in psychology is necessary to any lawyer who would write upon criminal responsibility. The discussion upon the distinction between motive and intention involves much hair splitting.

In a chapter on Wrong Doing, which is defined as "the seeking of gratification by an unprovoked act of intentional harm," the author appears to be trespassing upon a more strictly legal preserve but to the non-legal mind his illustrations appear unexceptionable and his reasoning sound.

Chapter IV. deals with Insanity. Sir Fitzjames Stephen's demand for "a definite account of the course of symptoms collectively constituting the disease" (insanity) is based upon an inadequate knowledge of the subject and is properly shown here to be impossible to comply with. Dr. Mercier describes the symptoms of insanity as threefold and as comprising disorders of conduct (the most important), of bodily function, and of mind. Of these illustrations are given. We are unable to see that hemiplegia can rightly be described as a symptom of insanity. Because a localised lesion occurs in a limited motor centre which happens to be in greater or less degree a portion of the physical basis of mind, is it proper to describe the resulting localised paralysis as a symptom of insanity? It appears to be merely a concomitant condition. Certain trophic disorders which occur in some cases of insanity but which are not striking are more legitimately described under this heading. To these Dr. Mercier alludes but for reasons stated they are not of importance from his present point of view. It would hardly appear necessary at the present day to demonstrate that a division of insanity into mania and melancholia is unsound and inadequate. Dr. Mercier's non-medical readers have only to consult a modern text-book to find that mania and melancholia are not regarded as complementary or mutually exclusive, or as comprehending all the things to be classified. In a chapter on Mind it is pointed out that of the various faculties or processes of mind the law has regard to only one ("thinking") or possibly two (the other being "willing") in determining the question of criminal responsibility; "yet all the faculties of mind are liable to be disordered, some in several ways." It is shown that the failure adequately to appreciate circumstances exists with all delusions. Undoubtedly this disability is often more important than the delusion itself, to which there is a tendency amongst lawyers to attach exaggerated importance. The reply to the common question, which is based upon the *Answers of the Judges* in 1843, whether a criminal knew the nature and quality of his act and that it was wrong, depends upon the meaning attributed to the word "know." This Dr. Mercier points out. In a narrow sense the deluded offender does "know." But in the wider sense of appreciation of, and sound judgment as to, all the bearings of the act and the circumstances existing at the time it would be wrong to say that any deluded person "knows." In a later chapter it is shown how the violation of reasoning power and unsoundness of judgment may "spread beyond the delusion and the things connected with it to an extent which we can never ascertain or define."

Disorders of will (impulses, obsessions) are considered.

Dealing with sexual perversion, Dr. Mercier cannot see why the acts by which the adolescent sexual pervert gratifies his desires should not be punished, as he sees no reason to suppose that the perverted desire is more urgent than the natural one. But whereas he says that the natural desire is susceptible of complete control, he admits (p. 148) that the act of the sexual pervert may be due to the overpowering strength of his desire. We must consider the person excited as well as the cause of his excitement. If these persons are to be punished injustice will be done to many cases of mental defect. In this part of the book there occurs other contentious matter to which reasons of space forbid reference. There is a chapter upon the *Answers of the Judges*; it is shown that however unsatisfactory the law based upon these may appear it does not in practice lead to such injustice to the insane offender as would warrant application for its alteration. Dr. Mercier lays down the principles which he considers should govern the treatment of insane offenders. He advances here the views which he holds upon the punishment of insane persons. Briefly, he considers that when insane persons commit offences in the same part of their conduct they are rightly punishable; that morally insane persons cannot be completely exonerated from punishment for certain offences; and that punishment when meted out to insane persons should be mitigated. Notwithstanding the wider meaning which Dr. Mercier would, as we think rightly, attach to the term "knowledge" (of the nature of an act) we are unable to subscribe to these views and believe them to be completely at variance with the bulk of expert opinion. In the concluding chapter on Procedure and Practice there is excellent advice on the subjects of the examination of prisoners and of giving evidence.

Whilst disagreeing with some of the views put forward in this book we find it instructive and interesting and it bears the stamp of that independence of judgment and ability in exposition which characterise the author's work.

International Clinics. Edited by A. O. J. KELLY, A.M., M.D., Philadelphia. Volume I, Fifteenth Series, 1905. London and Philadelphia: J. B. Lippincott Co. 1905. Pp. 312.

THE present volume contains numerous interesting articles on "treatment," medicine, surgery, neurology, and obstetrics, in addition to a summary of the progress of medicine generally. Dr. P. Merklen (Paris) contributes an article on the Treatment of Cardiac Asthma. He first defines the phenomena presented by this condition and then proceeds to show that in its treatment there are three important elements to consider: nervous and paroxysmal dyspnoea; mechanical dyspnoea due to pulmonary stasis and sometimes to pulmonary oedema; and finally, disturbances of the general circulation. Of these the most important is the pulmonary stasis and Dr. Merklen is of opinion that if the attack is severe no hesitation should be felt in resorting to bleeding. Most physicians, we think, will support Dr. Merklen's contention. For preventive treatment he advises theobromin given in doses varying from ten to 15 grains daily. He suggests that this drug, the administration of which the system will tolerate for long periods, should be combined from time to time with digitalin.

Dr. Albert Robin (Paris) is responsible for an interesting communication on the Treatment of Cirrhosis of the Liver, Unusual Syphilis, Tuberculosis, Suffocative Catarrh, and Mucous-membranous Enterocolitis; a Clinic in General Medicine. Dr. Archibald Young (Glasgow) deals with Skin-grafting in the Late Treatment of Severe Burns involving extensive areas of skin and gives a description of an essential modification in the operative

technique of Wolfe's or Krause's (whole thickness of the skin) method and adds notes of a series of illustrative cases treated according to this plan. Dr. F. Durante (Rome) publishes a clinical lecture on a New Operative Method for the Total Extirpation of the Larynx. He remarks that all surgeons are familiar with the frequency of death following total extirpation of the larynx, the fatal result being due in the great majority of instances to inhalation pneumonia. The operative procedures hitherto devised to obviate this serious complication have failed to achieve the desired object, because they do not succeed in preventing the mucus and the saliva, which drop from the mouth, the posterior nares, and the pharynx, from reaching the bleeding surface and the trunk of the trachea, which latter, situated at the bottom of the large wound, acts as a funnel to convey these products to the lungs. To obviate this difficulty Dr. Durante has devised an operative procedure comprising the formation of a cutaneous flap intended to close the pharyngeal œsophageal opening, so that the mucous and salivary secretions may be conveyed directly into the œsophagus and the large bleeding wound which remains after the larynx has been extirpated may be reduced to a minimum. Dr. R. A. Hibbs (New York) communicates some interesting observations on Disease of the Knee-joint.

In the section on Neurology Dr. J. Walter Carr (London) reports a case of Cerebellar Tumour and Dr. Edwin Bramwell (Edinburgh) comments on two cases of Ocular Palsy in both of which the paralysis was probably dependent upon a lesion in the neighbourhood of the sphenoidal fissure.

On the whole this volume of "International Clinics" well maintains the high standard of its predecessors.

The Nature and Origin of Living Matter. By H. CHARLTON BASTIAN, M.A., M.D. Lond., F.R.S., F.L.S., &c., Consulting Physician to University College Hospital, &c. London: T. Fisher Unwin. 1905. Pp. 344. Price 12s. 6d. net.

WITH the progress of knowledge opinions change and the most cherished beliefs of one generation may become the laughing-stocks of the next. On few subjects can we claim to have attained to anything approaching certainty and the attitude of the scientific mind must be one of readiness to adapt its beliefs to ascertained facts, unbiasé by previous opinion or recognised authority. At the present day there is perhaps no scientific tenet more firmly held than that of the impossibility of spontaneous generation under existing conditions. The doctrine, "*Omne rium e rito*," is almost universally held to be beyond the sphere of controversy, a sharp dividing line apparently separating living from dead matter. This belief was not always held; the ancients believed in the spontaneous generation of bees, for example, from a decomposing carcass and other similar phenomena were until quite recent times supposed to occur. As knowledge gradually advanced the possibility of such a *de novo* origin of life was relegated to lower and lower spheres, and what seemed the final stronghold of the defenders of this doctrine, the origin of bacteria from non-living substances, seemed decisively overthrown by the labours of Pasteur and the early bacteriologists.

In the book before us Dr. Bastian attempts to show that there is definite evidence not only that spontaneous generation of lowly organisms does occur but also that there is no such fixity of form among them as is generally held to obtain, one variety of protozoön being able to give rise to another, and even bacterial aggregates sometimes developing into higher forms. The two alleged phenomena—spontaneous generation and mutation of species—are radically distinct and the former, called by Dr. Bastian archebiosis, is of far more importance than the latter or heterogenesis. The assumption that at some time or other

in the past history of the earth living matter originate from non-living substance, is justified in the eyes of those who make it by asking the question, What other theory will work? Certainly the suggestion that life was brought to this planet in some manner from other parts of the universe only throws the problem of the origin of life a step further back, while introducing a difficulty, that of the conveyance of living germs across space; but one speculation will seem to practical men as jejune as the other, at any rate with our present capacities for research.

Still we must regard the question as one of evidence, and Dr. Bastian brings forward evidence which he believes to be conclusive in favour of what he terms archebiosis. He points out that, when organs are removed with all aseptic precautions from the body of an animal and coated with paraffin bacteria nevertheless develop within them, yet it is not supposed that such germs exist naturally in living tissues. The same phenomenon takes place in vegetables kept under antiseptic conditions in which an infection by bacteria is difficult to conceive. The only alternative to the spontaneous development of living organisms from dead tissues is the supposition of latent organisms normally present in living bodies, or an error in technique. Dr. Bastian has observed the actual process of development of bacteria in a thin film of nutrient medium, this development starting at points where absolutely no sign of any solid particle can at first be seen; a minute speck at length appears and grows into a bacillus. He admits that boiling a nutrient medium keeps it aseptic indefinitely; no spontaneous generation takes place but, of course, it can be argued that boiling has altered the quality of the fluid. The same alteration may perhaps be produced by passing it through a porcelain filter and an experiment is cited by the author bearing out this suggestion. Such is Dr. Bastian's position respecting archebiosis; here in default of actual evidence probability must be our guide in interpreting phenomena. On the subject of heterogenesis he quotes a multitude of observations upon low forms of life, both animal and vegetable. He maintains that bacterial zoöglæ may develop not only into fungi but into amœbæ, that euglenæ may change into peranemata and into ciliata, that the resting spores of vaucheria may develop into amœbæ, and so on.

Of the careful and painstaking nature of Dr. Bastian's researches there can be no doubt. Probably few other observers are in a position to contradict his conclusions from personal experience, although these conclusions are at absolute variance with accepted biological teaching. Our knowledge of the life-history of these lowly living things is confessedly inadequate, and it is no unusual experience in biology to find that what has long been looked upon as a distinct species is only a stage in the development of another well-known organism. But how far the discovery of one or two such occurrences would help to reconcile Dr. Bastian's position with that taken up by observers of equal eminence, whose views are followed by the scientific world, is another question. To our mind it would seem certain that as facilities for research increase, increased knowledge may lead to many changes in classification without having deeper significance.

LIBRARY TABLE.

Harrison's Medical Charts. Published by the Pembroke-road Nursing Home.—These charts are two in number, respectively known as "No. 1" and "No. 2." "No. 1" is in the form of a temperature chart. It differs from most other charts, which we have seen, in having the divisions of each degree of temperature clearly numbered. The centigrade and the Fahrenheit scales are both provided.

Beneath the chart are spaces in which the pulse and respiration rates, the amount of urine passed, the specific gravity of the urine, and the presence of albumin or sugar may be duly recorded. "No. 2" is in a form that may be conveniently used by the nurse when making the daily records. The medical practitioner in attendance on the case is able to see at a glance the progress or the reverse that has been made since his last visit. The charts are of a convenient size and will be found useful more particularly in general practice.

An Examination of the Condition of Primary Schools in Dublin in 1905. By Sir CHARLES A. CAMERON, C.B., M.D. R.U.I., &c. Dublin: Printed by John Falconer. 1905. Pp. 37.—This short pamphlet contains details of the results of an examination of 174 national schools. "The primary schools under the management of the Christian Brothers and the Church Education Society were not examined as yet." The report states that though many schools are up to a high standard from a sanitary point of view, yet a much larger number are far from being in a satisfactory condition. From p. 8 the report consists of tabular matter giving details as to the name of the school, whether for boys, girls, or infants, the average number of attendances, the cubic space and floor space per pupil, the drainage, the sanitary accommodation, and other matters. The various defects, where existing, can thus be clearly seen by the authorities of the schools in question and we may echo Sir Charles Cameron's hope that "this examination of schools will be the means of causing many of these defective conditions to be remedied."

Catherine Grace Loch, R.R.C.: A Memoir. With an Introduction by Lord ROBERTS. London: Henry Frowde. 1905. Pp. 355. Price 4s. net.—This unpretending little work will be read with interest by all medical men and more especially by two classes of them—namely, officers of the Indian Medical Service and St. Bartholomew's Hospital men. All medical men who were at that hospital from about 1882 to 1887 will recollect "Sister Darker" and how admirable a sister she was. Miss Loch was born in 1854 and was trained as a nurse at the Royal County Hospital, Winchester. She went to St. Bartholomew's Hospital in 1882 and in 1888 left for India as one of the lady superintendents of the newly formed Indian Nursing Service. Her companions were another superintendent and eight nursing sisters. The reforms which the formation of the nursing service effected are, it would appear, comparable to those brought about in the Crimea by the arrival of Florence Nightingale and her devoted helpers, at least as regards the removal of "red tape" restrictions. The main portion of the book is occupied with selections from Miss Loch's journals and there is an appendix containing papers on various subjects connected with nursing written by her, together with appreciations from those who knew her. She died from cerebral hæmorrhage in 1904. The book is a worthy record of a bright, intelligent, earnest-minded woman.

Official Year-Book of the Scientific and Learned Societies of Great Britain and Ireland, 1905. London: C. Griffin and Son, Limited. 1905. Pp. 309. Price 7s. 6d.—This volume is a record of the work done in science, literature, and art by various societies and Government institutions during the session 1904-05. It is valuable for reference, for on its pages can be seen at a glance what papers were read, what subjects were dealt with, and who were the persons working in the different branches of science, literature, or art. Among the many year-books this, from our special point of view, is one of the most useful.

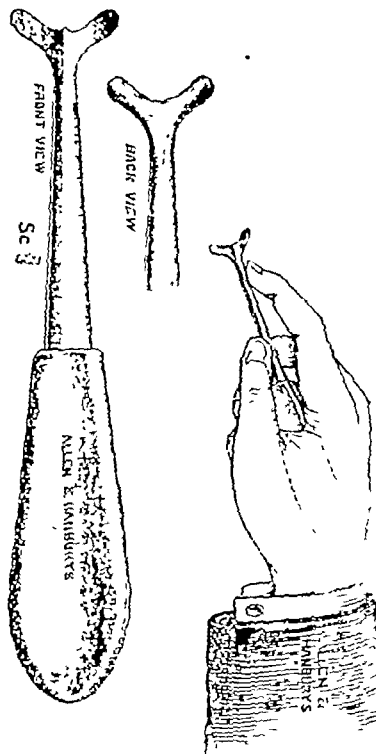
The Oxford Year-Book and Directory, 1906. London: Swan, Sonnenschein and Co., Limited. Pp. 764. Price 5s. net.—This is a work of reference which will certainly appeal to Oxford men. It is, of course, extremely difficult in a

book of this kind to keep all the entries up to date and from a casual examination of sundry names in this edition we notice that a good many of them are not accurate as regards present conditions. On the whole, though, the book will be found useful.

New Inventions.

AN IMPROVED DENTAL ELEVATOR.

WITH a view to economising time as well as avoiding the inconvenience of changing instruments I have designed the double blade elevator shown in the accompanying illustration. It is a combination of the well-known right or left curved elevators and possesses the advantages of both these instruments. I have had an elevator of this pattern in use



for some two years in hospital and private practice and have found it most useful in cases in which a number of dental extractions had to be performed in a minimum of time and with a minimum of instruments. For purposes of description I call it a "fish-tail" elevator. It is manufactured by Messrs. Allen and Hanbury, Limited, 48, Wigmore-street, London, W.

C. EDWARD WALLIS,

Assistant Dental Surgeon to King's College Hospital.

Queen Anne-street, W.

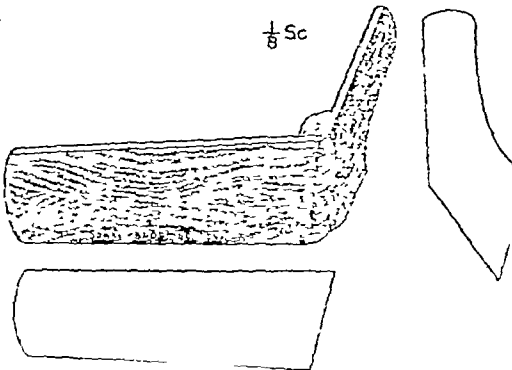
LITHOTOMY STRAPS.

AN improved set of lithotomy straps designed by me is made of strong white webbing; the straps have running loops for applying just above the ankles, with a sliding buckle on the outside of each leg. The other end of these ankle straps is attached to the neck strap by means of a buckle. The neck strap passes round the patient's neck in the same way as a Glover's crutch, viz., one end over and the other under the shoulders respectively. The leg buckle being a sliding one permits the ankle loop to alter in size to fit any leg, whilst the neck strap can be made to pull the legs up to the required tension. The patient is placed in the lithotomy position and by means of these straps the legs are kept well apart, and more so if

the patient is under an anæsthetic. There is no bar to interfere with urethral instruments. They are compact and easily sterilised. They are made by Messrs. CARSON, Gerrard, and Co., Corporation-street, Birmingham, and cost 5s. the set. THOMAS YOUNG SIMPSON, M.B., B.S. Durh., Plymouth. M.R.C.S. Eng., L.R.C.P. Lond.

A NEW SPLINT FOR COMPOUND FRACTURES OF THE HUMERUS.

THE illustration given below is that of a modified angular arm splint adapted for application to the anterior surfaces of the upper and fore arm, whilst allowing the latter to be held midway between supination and pronation, i.e., in the most comfortable position. By its use accurate apposition of the fragments may be continuously maintained in such severe compound fractures of the humerus as involve the outer and inner aspects of the upper arm at once, and



which thereby entail the removal of an internal or external angular splint and consequent disturbance of the parts when dressing the wounds. The idea can be easily carried out by an amateur carpenter and as I have found it most useful in such a case it may possibly be of some help to others in similar emergencies. It is made wider than usual to allow of firm bandaging without producing venous congestion, a point neglected in many splints. Both a right and left pattern are, of course, necessary. It has been made for me by Messrs. Down Brothers.

Nottingham.

ALEX. R. TWEEDIE, F.R.C.S. Eng.

LEPROSY IN NEW SOUTH WALES.

THE report of the Board of Health on leprosy in New South Wales for the year 1904 was issued on Oct. 31st, 1905. During 1904 eight cases of leprosy were admitted, making, with those remaining in the lazaret from the previous year, 18 in all; of these one leper died during 1904, leaving on Dec. 31st, 1904, 17 lepers under treatment; of these 13 were whites and four were coloured lepers. The total number of lepers admitted into the lazaret since it was opened in 1883 amounts to 96; of this number 44 were whites and 52 were coloured lepers. It must, however, be noted in this connexion that it is only since 1890 that the notification of leprosy has been compulsory in New South Wales and the detention of lepers made lawful. During the 22 years (1883-1904) the several admissions were distributed according to years as follows: 5, 2, 2, 3, 1, 4, 2, 2, 10, 12, 7, 5, 3, 3, 2, 4, 1, 1, 8, 10, and 8. These numbers serve to show the chronicity and persistency of leprosy infection in an infected area and the slight tendency to a rise and fall of the numbers of lepers in a given district. The youngest leper admitted was a schoolboy, aged 13 years, born in Fiji of European descent; the oldest leper on admission was an English seaman, aged 75 years. The occupations of the lepers before admission were various, no trade seemingly predominating and almost all trades being fairly represented.

The analysis of cases by Dr. J. Ashburton Thompson, the President of the Board of Health, which were admitted during 1904 is interesting reading.

CASE 88.—A married female, aged 19 years, a native (European) of New South Wales; her father was admitted into the lazaret in 1890. The girl had lived during the first five years of her life in the same abode as her leprosy father. The girl's mother, brothers, and sisters, husband and child (aged one year) were not lepers.

CASE 89.—A female, aged 17 years, born in Sydney, New South Wales, of European parents. She had worked for two months at a box factory and for three weeks at a printer's. Neither of her parents nor her brothers and sisters were leprosy, nor were any relatives or neighbours with whom the girl associated leprosy.

CASE 90.—A male, aged 54 years, a teamster, born at Botany, New South Wales, of European parents. At the age of 20 years he travelled round the State with elephants, otherwise he always lived at Botany. For seven years before becoming leprosy he worked as a carter, carrying hides from the abattoir. Neither his wife nor any of his five children were leprosy. The source of the infection was unknown.

CASE 91.—A male, aged 24 years, a laundryman. This patient was a Chinaman; he had been three years in Sydney before becoming leprosy.

CASE 92.—A male, aged 35 years, a labourer in the cane fields. He was a native of New Hebrides. He arrived in Queensland 15 years ago. He was acquainted with other lepers.

CASE 93.—A male, aged 65 years, a soldier. He was a native of England. He was married; he had nine children, none of whom were leprosy. He had been stationed at Ceylon and New Zealand and went to live in New South Wales in 1866.

CASE 94.—A male, aged 32 years, a Chinese labourer. He had lived in New South Wales several years previously to the attack.

CASE 95.—A male, aged 23 years, a house painter, born in New South Wales, of European parents. He served in South Africa as a soldier in the cavalry; whilst in Johannesburg in 1902 he noticed first symptoms of leprosy. Neither father or mother nor any one of his six brothers and sisters was leprosy.

These cases admitted during 1904 serve to indicate the history of the persons suffering from leprosy who have been admitted in the lazaret since 1883. The proportion of persons of European descent or actually born in Europe who have developed leprosy in New South Wales is very large and it would seem that in no part of the British Empire are so many white people attacked by leprosy relatively to the population as in the Antipodes. The cause of this is unknown, nor is there any known means of ascertaining the cause; for the medium of communication and the extra-corporeal life of the bacillus lepræ are as yet unascertained. That the infection is apparently communicable from parent to child is occasionally the case, but there is nothing of the nature of proof that it is so. That the disease is conveyed by contact with any animal or by engaging in any trade or pursuit is likewise not proven. The development of cases seems so sporadic yet so persistent in some localities that a focus of infection would seem likely, but what that focus is or how the disease is spread therefrom is equally a mystery at present.

What is described in the report as the Lismore group of cases would seem to indicate family contamination, for the proofs that the members of the family lived together or that some of them had ever met for several years are not conclusive. The fact also that some of the cases mentioned in the Lismore group were not pronounced to be lepers during life would seem to throw some doubt upon the accuracy of the diagnosis.

ST. BARTHOLOMEW'S HOSPITAL: THE LUTHER HOLDEN RESEARCH SCHOLARSHIP.—Mr. Harold W. Wilson, F.R.C.S. Eng., late house surgeon to St Bartholomew's Hospital, has been elected to the Luther Holden research scholarship in surgery for one year. The scholarship is of the annual value of 100 guineas and was founded by the bequest of the late Mr. Luther Holden, formerly surgeon to St. Bartholomew's Hospital and President of the Royal College of Surgeons of England. The holder of the scholarship must carry out such research work in surgery as may be approved by the electors either in the United Kingdom or abroad. Mr. Wilson has proposed to carry on research work in urinary surgery.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 10, 1906.

The State of the Medical Curriculum.

SIGNS are accumulating that the present arrangement of the medical curriculum gives little satisfaction to either teachers or students. The falling off in the number of entries at the London medical schools is, as all our readers know, largely explicable on other grounds, but it is a continuation of the decrease which ensued upon the institution of the five years' course—a change which greatly increased the expense involved in obtaining a qualification. A consciousness that the profession was becoming somewhat overcrowded has had something to do with the decreasing entries at many centres, while in London the difficulty in obtaining a medical degree has had disastrous effect. The dissatisfaction felt by many of the teachers of medicine is exemplified in the proposal which recently came before the Royal Colleges of Physicians of London and Surgeons of England for altering the time for the study of certain of the preliminary subjects. This was an attempt on the part of the bodies mainly concerned in London medical education to meet the growing sense that the curriculum was overcrowded and disorderly, facts which have been frequently insisted upon in our columns and which are tersely put forward in a letter from Dr. CECIL BOSANQUET, which we publish this week. The difficulty of insisting upon a due proportion of the student's time being devoted to clinical work in view of the claims of the ancillary sciences is increasing. It is admitted, indeed, that whereas the additional year of study was provided with the special object of allowing more time to be devoted to clinical work, the actual effect of the change has been inappreciable in this direction. As is pointed out by Dr. BOSANQUET, the existing arrangement is an attempt at a compromise between the conflicting claims of various branches of knowledge, and as the sum of our knowledge increases so there is a tendency to keep adding to the subjects which are regarded as essential for the mental equipment of a medical man. Unfortunately, the capacity of the human mind for assimilating information does not grow very perceptibly greater, and we have to acknowledge that, however much we may endeavour to cram into it, only a limited amount will stick in the meshes of the sieve, the rest merely running through at varying rates in different cases.

Everyone who has been brought much into contact with medical students at the present time must admit that only a small proportion of the earlier subjects remains as an effective mental asset at the time of the final examination, while there is reason to fear that much of the theoretical matter insisted upon, even for final examination

purposes, is soon excreted under conditions of actual practice. Now, if some fundamental recasting of the curriculum is called for, as we can hardly doubt, it is important to keep steadily in mind the true object at which we have to aim. We agree with Dr. BOSANQUET, for indeed we have said much the same thing in different words, that this object is divisible into two heads—namely, the special professional knowledge which will render a man capable of dealing with sick persons in the most efficient manner, and the general culture which enables him to take his place among educated men as a member of a learned profession and as an individual intellectually "totus t. res atque rotundus." This general education it is no part of the medical curriculum to supply, but on those who preside over it rests the duty of instituting such an entrance examination for all candidates for medical qualifications as shall effectually maintain an adequate level of culture. No arduous standard could, of course, be enforced, especially in view of the early age at which students enter on the medical course—and it is permissible to speculate as to the advisability of raising that age—but it should at least be possible to insure that those who pass the examination should have a reasonable knowledge of their mother tongue and should possess the average degree of information to be expected from members of the cultivated classes at that period of life. Leaving out of account the universities at which a degree in Arts is compulsory before one can be obtained in medicine, it would seem desirable that the preliminary examination should be the same for all candidates for the different professions. The Board of Education, through a consultative committee, has recently proposed to inaugurate such a scheme and in so doing has been assisted in its efforts by the General Medical Council. The consultative committee considers that a general system of school certificates should be granted upon examinations controlled by a combination of universities and of local bodies coöperating with them, and we agree with this view, for the more generally representative the preliminary education the better it will serve the purpose of the medical student. A considerable range of alternative subjects might be left open to candidates so as to admit of recognising abilities in all directions, for all minds are not alike and should not all be tested in the same sieve.

There can be no doubt that the number of purely professional subjects in which examinations have to be passed by the medical student needs reduction, and that to enable a judgment to be formed as to what is necessary and what superfluous a clear view of the object to be aimed at must be maintained. In order to secure the best possible treatment of the sick it is necessary to reverse the old jibe at physicians as men who poured drugs of which they knew little into bodies of which they knew less. The modern practitioner must, on the one hand, possess an adequate acquaintance with the structure and functions of the body so far as science has discovered them, and, on the other hand, he must be expert with the weapons of offence and defence which have been forged for the battle against disease. The former branches of knowledge are the subject matter of the sciences of anatomy and physiology; the latter of pathology, materia medica and therapeutics, while chemistry enters into both

alike and seems destined to occupy a position of increasing importance in solving the problems of both physiology and pathology in the future. A sound knowledge of the essential truths of these branches of science is therefore absolutely indispensable to every modern medical man as the basis of his practical skill, which last is only to be obtained by a constant and painstaking application of all his powers to the study of the problems of disease at the bedside. To this last all the other studies are subordinate and any scheme which reverses this relation is radically unsound. What, then, it may be asked, is it possible to omit from the existing scheme of studies? There remain the sciences of physics and biology at present confronting the student at the threshold of his career. True it is that an elementary knowledge of both ought at the present day to form part of the intellectual equipment of all educated men, but how far is such knowledge more necessary for the members of the medical profession than for those of any other liberal calling? And as a matter of experience, how much of the knowledge gained during the study of these preliminary subjects does the student actually retain at the time when a small amount of theoretical physics is needed? We believe that anyone of average ability and sound general training who came fresh to such a subject would be in a good position to comprehend the small amount of technicality needed and that many students have wasted precious hours over a study which is thrown aside as soon as the necessary examination is over. We do not for one moment deny that an acquaintance with both physics and biology is valuable, highly valuable. We would have every student thoroughly grounded, nay, thoroughly expert, in each if this were possible. But it is not. The curriculum is overloaded and compromise has become necessary. These sciences might form part of the entrance examination as optional subjects, for which enough marks might be given to encourage candidates to study them. Those who studied them most deeply would continue to study them and would naturally tend towards the purely scientific side of their profession. Those who did not elect to pass in them would in our opinion make none the less valuable practitioners in thousands of responsible situations. The five years of the medical course would then be less crowded than at present and more time would be available for what is indispensable. As things are it is the essentials which suffer. We fit the mint and anise and cummin, and forget the weightier matters of the law, and as a result we bind on our students burdens too grievous to be borne.

Scientific Disinfection.

Nor many years ago, the only experimental means at our disposal of determining the disinfecting powers of a substance consisted in observing the amount of that substance which was required to arrest in a given time the putrefactive process in a liquid easily susceptible of change. Some sort of rough classification (amongst certain chemical substances was thus set up, and such relative terms as "powerful," "strong," "moderate," and "feeble" were used to indicate the comparative disinfecting efficiency of each agent. Later, the method

was made approximately quantitative. As the relationship of germs to disease came to be recognised, and also the fact that different germs possessed different powers of resistance to specific substances, such a method of assaying the germicidal efficiency of a disinfectant proved to be an altogether untrustworthy means of evaluation. Chemical analysis gives valuable data so far as it affords information as to the amount of active agent present, but we now know that the efficiency of a given antiseptic does not necessarily depend upon the proportion of a particular chemical substance present, for in some cases at least an association of substances proves to be more powerful. Physical conditions also count in the case of both the disinfectant and the matter to be disinfected. The disinfectant of to-day must show something more than chemical strength and, in fact, nothing short of a bacterial hall mark of efficiency is required, as in no other way can the slightest hope be entertained of exterminating infective forces. This is a sound principle in the practice of disinfection which every sanitarian must recognise, and yet in daily application it is very generally ignored and practically no greater care is taken in these days of advanced bacteriological knowledge scientifically to choose a disinfectant than was taken in the days when anti putrefactive power was employed for standardisation purposes. The points which some local authorities seem to regard as essential in a disinfectant are cheapness, appearance of strength, and a more or less powerful smell—agreeable or disagreeable according as they choose to think an aromatic odour or a rank odour the better proof of efficacy. The practical business of disinfectants is not to soothe susceptibilities by tickling the nostril but to destroy infection.

It is satisfactory, therefore, to learn that the feeling is gradually but surely spreading that some method of standardisation of disinfectants based on their power to kill the microscopic entities of disease ought to be adopted officially. Methods are not wanting which can be trustworthily applied to the purpose. We need only refer to the recent report, made on behalf of the Disinfectant Standardisation Committee appointed by the Royal Sanitary Institute. This report was signed by Professor ALLAN MACFADYEN and Lieutenant-Colonel R. H. FIRTH, R.A.M.C., and is published in the February number of the journal of the Institute. In the same number, too, is a paper of great practical value on the identical subject by Dr. HENRY R. KENWOOD and Dr. R. T. HEWLETT who point out the importance, when experimentally determining the germicidal efficiency of a disinfectant, of taking into account the influence of the associated organic matter upon the potentialities of the disinfectant. Their experiments were accordingly made with typhoid stools and urine with the view of determining the absolute and relative value of a few disinfectants under the conditions that obtain in practice. The detection of the bacillus coli was made the basis of the tests, and it may fairly be assumed that where the bacillus coli has been destroyed the bacillus typhosus has certainly also been destroyed. Two sets of experiments were made independently by Dr. KENWOOD and Dr. HEWLETT. As might be anticipated, the results when two disinfectants were tested by this direct and practical method showed a falling off in

germicide efficiency (as represented in a carbolic acid coefficient) compared with the results which will be obtained in the RIDEAL-WALKER experiments where a pure culture is taken. The reduction of germicide efficiency in the two disinfectants employed amounted to 60 and 40 per cent. respectively. Dr. KENWOOD and Dr. HEWLETT very rightly urge that a margin of safety should be allowed in practice, and suggest that the minimum amount of a disinfectant which is effective under standard conditions for sterilisation purposes should for practical use be doubled while a still larger multiple might with advantage be employed.

In view of these results it is obviously desirable that a carbolic acid coefficient should be based on the most exacting requirements of actual practice, taking into account the environment of the pathogenic organisms which, in some cases at any rate, is calculated to weaken the germicide agent. It should not be difficult to supply such a guarantee and medical officers should demand it. If disinfectants are to be reckoned as weapons at all in the fight against disease their thrust should have an unmistakably fatal effect on the enemy.

The Metropolitan Water Board: the Monthly Report of the Water Examinations.

WE have received the first monthly report of Dr. A. O. HOUSTON, the director of water examinations of the Metropolitan Water Board, which deals with the month of November, 1905. Considering the size of the document—over 90 large pages the bulk of which is tabular matter—its appearance at the beginning of February is very praiseworthy. The results of the chemical and bacteriological examination of the London waters for the month in question are set out very fully—more fully, it should be mentioned, than they will in all probability be in future reports of the kind. This pioneer report is issued in an extended form to show the scope of the work done at the laboratory and the precautions taken by Dr. HOUSTON and his assistants to secure for the enormous clientele of the Metropolitan Water Board a pure water-supply. Future reports will, we are informed, be in a condensed form, although the labours represented by the summaries will be no less detailed than exacting.

Dr. HOUSTON's report, after enumerating the number and sources of samples—chemical, bacteriological, and special—taken from raw and filtered waters, explains the number and nature of the tests applied to the specimens and gives a summary of the bacteriological and chemical results. The bacteriological results are considered under the headings of (a) the number of microbes; (b) the bacillus coli test; and (c) the bacillus enteritidis sporogenes test. To these tabular statements, which may be regarded as laboratory documents, there are added 11 appendices dealing with various meteorological and statistical information, with visits made for sampling or other purposes during the month, and so on, together with sketch maps illustrating the waterworks. It may be remembered that now eight years ago we published in THE LANCET an exhaustive report on the metropolitan water-supply. At that time, of course, the water-supply of

London was in the hands of eight separate companies, while a Royal Commission was about to sit and to consider, firstly, the arguments for the consolidation of these undertakings under one central board, and secondly, if such consolidation seemed advisable the price that should be paid to these separate companies for the resignation of their rights. Our Special Commissioner, with a view of furnishing the public with the information upon which the report of the Royal Commissioners would in many directions turn, made, with the hearty coöperation of the companies, a series of visits to all the works. He described every pipe, main, reservoir, and distributing surface connected with each of the companies, and all of these details, together with the areas of distribution, were shown in a series of maps drawn expressly for the purpose. These maps and illustrations proved to be a source of valuable information to the public, for nothing of the sort was available elsewhere, and few of the citizens of London had any idea either of the magnitude of the London water companies, of the elaborate precautions taken by some of them against pollution, or of the defenceless attitude of the purchaser in his dealings with these great undertakings.

As is well known, the Royal Commission duly sat under Lord LLANDAFF, and from its conclusions arose the Metropolitan Water Board, under which Dr. HOUSTON acts. We recommend our readers, particularly our London readers, to peruse Dr. HOUSTON's reports as they come out and to examine the excellent sketch maps in the present document. If these maps are examined carefully, and particularly if they are looked at in connexion with the far more elaborate and detailed plans which appeared in THE LANCET in 1897, the reader will get a very good idea of what the water-supply of the metropolis really is and what are the dangers of pollution or shortage. It is important that all medical men should be alert to the difficulty of supplying a huge city like London with pure water. It must not be supposed that difficulties in respect of the water-supply of London have come to an end with a consolidation scheme. The population of London grows apace. Even though the birth-rate shares in the general decline of birth-rates, the fact remains that London grows each year by enough persons to make up in themselves a great city, to say nothing of an addition of 800 aliens per week. The Thames, the Lea, and certain chalk wells may appear inexhaustible but we may be certain that the Metropolitan Water Board does not think so.

Annotations.

"Ne quid nimis."

THE EMPIRE'S SCHOOL OF TECHNOLOGICAL SCIENCE.

AT length it would seem that the scheme which has long been desired in this country of providing an efficient centre of higher technical education is about to be realised. The matter has been the subject of inquiry for about two years by an admirably constituted departmental committee which has just concluded its labours in the form of a report which throws great credit on the energies and ability of the members who comprised the committee, and whose names are as follows: Mr. R. B. Haldane, K.C., M.P., Sir Francis Mowatt, Sir W. de W. Abney, F.R.S., Sir William S. Church, Mr. A. H. Leech, Sir Philip Magnus,

M.P., Mr. Walter McDermott, Mr. F. G. Ogilvie, Lord Reay, Sir Arthur W. Rücker, F.R.S., Mr. Sidney Webb, Sir Julius C. Wernher, Sir William H. White, F.R.S., Mr. J. C. G. Sykes (secretary), and Mr. F. E. Douglas (assistant secretary). The object of the scheme in the terms of the report is "the establishment of an institution or group of associated colleges of science and technology where the highest specialised instruction should be given and where the fullest equipment for the most advanced training and research should be provided in various branches of science, especially in its application to industry, for which no sufficient provision exists elsewhere." It is proposed that the new College of Science should be situated in South Kensington where are the present College of Science, the School of Mines, the New Physical and Chemical Laboratories, and the Central Technical College. Sanction from the Government has been obtained to place these institutions under the new régime, together with an annual grant of £20,000 for maintenance. Further, the Commissioners of the Exhibition of 1851 are prepared to grant the unoccupied portion of their estate at South Kensington under conditions which there should be little difficulty in satisfying. Over £100,000 have been promised by Messrs. Wernher, Beit, and Co. for buildings and initial equipment and the London County Council anticipates contributing an annual sum of £20,000 to the funds. It is considered that the scheme should have the coöperation of the University of London and the council of the City and Guilds of London Institute. As to the governing body, 40 members are proposed, representing respectively six members appointed by the Crown, four by the Board of Education, and five each by the University of London, the London County Council, and the council of the City and Guilds Institute. Other members would represent the teaching staff, the Exhibition (1851) Commissioners, the Royal Society, the Society of Chemical Industry, and the principal engineering societies. So well is the scheme advancing that there is every reason for believing that in a very short time this country will be able to boast of the actual existence of an institution in which will be adequately provided facilities for advanced instruction and for conducting research in science more particularly in its application to industry. No longer, therefore, will it be a national reproach that ways and means towards this end have hitherto not been forthcoming—an omission which has long been a menace to our industrial supremacy.

SCIENCE IN THE SERVICE OF FRAUD.

IN some ways the detection of adulteration is revolving itself into a scheme for exposing the devices of skilled scientific men, for there is little doubt that there are men who in the name of science aid and encourage the practice of adulteration and who place their knowledge and skill at the disposal of manufacturers, knowing full well that their advice and suggestions are to be applied with the deliberate aim of defeating the detection of fraud. The manufacturers of such goods may, of course, have received sufficient training themselves in scientific and technical matters to enable them to apply their knowledge to dishonourable practices but it is more probable that the services and counsel of an expert are called in. The occupation which such an expert chooses to follow for his own gain can only be described as contemptible, and if his services in this direction can be proved to have been offered with the object of defeating justice it seems to us that the law should be able to reach him and to mete out to him a severe reward in the shape of imprisonment. Analysts are constantly confronted with considerable difficulties in the detection of modern fraud, so ingenious are the tricks of unscrupulous persons. Indeed, the tricks bear unmistakable evidence of

a scientific conjuror who knows perfectly well what the analyst is guided by in making a search for adulterations. The analyst looks, for example, for certain factors in a food which when he has found them to satisfy a given standard he regards as evidence of genuineness, and yet the article may be a fraud, the factors being artificial and manipulated by the scientific adviser. Such may be the case especially with oils and with butter, the genuineness of which is judged partly by physical constants and partly by chemical behaviour. The physical constants and the chemical behaviour may respond as though the article were genuine but all the same it may not be so but may only show the characteristics of the genuine substance which after all may have been artificially given to it. A sample of genuine brandy, for example, contains a certain proportion of ethers but it does not follow that because a spirit contains this amount of ethers it is genuine brandy. There can be no doubt that when a standard of ethers, rightly or wrongly, was laid down for brandy this deficiency in spurious brandy was made up, on the advice of an expert, by adding artificial ethers. Yet another example. A genuine wine contains fairly constant amounts of alcohol, tannin, glycerine, and so on, but it would be utterly unscientific to conclude that because an article described as wine contained these things in the same amount it was genuine wine. And there is little doubt that advice is cheerfully offered by experts in the name of science to give a false *tout ensemble* to many articles of food as well as clothing. Their education, knowledge, and skill do not exempt them from being branded as infamous cheats; on the contrary, their conduct is more contemptible than if they were ignorant men.

THE MILK-SUPPLY OF SCHOOLS.

WE have before us a report of a preliminary inquiry on the subject of the milk-supply of schools which has been drawn up by Dr. C. E. Shelly, consulting medical officer to Haileybury College, and published by the Medical Officers of Schools Association. This inquiry was the outcome of a paper read before the association by Dr. Christopher Childs, in which it was urged that recommendations should be formulated for safeguarding the milk-supply of schools by sterilisation or otherwise. It was recognised by the council that on so controversial a question no authoritative pronouncement could be made until trustworthy statistics with regard to the extent to which disease among school children could be traced to infection conveyed by milk had been collected and examined. With the object of procuring such statistics more than 100 circulars were forwarded to the medical officers of representative schools throughout the country containing certain definite questions to which answers on printed forms were solicited. In response to these circulars answers were received from 43 correspondents supplying details as requested with regard to the source of the milk-supply, the precautions adopted, and the diseases contracted. The information thus collected has been tabulated and analysed by Dr. Shelly and the observations, which have been estimated to cover a total of 33,894 children during a period of 18 years, show a record of 10 cases of diphtheria, 20 cases of enteric fever, 50 cases of diarrhoea, and 75 of sore-throat, all of which are attributed by the respective medical officers to infection conveyed by milk. The incidence of these diseases on children attending schools at which precautions have and have not been taken is certainly instructive, though by no means conclusive, as evidence in favour of safeguarding the purity of the milk by any particular means or method. The individual children who are included in the statistics are classified as belonging to schools at which (1) precautions are taken to safeguard the milk at the source of supply; (2) precautions are taken both at the source and at the school

premises; (3) partial precautions are taken; and (4) no special precautions are taken. In Group 1 no illness of any kind is reported as traceable to milk infection; in Group 2 there are 50 cases of diphtheria and 35 of sore throat; in Group 3 there are ten of diphtheria and 40 of sore throat; and in Group 4 there are 20 cases of enteric fever. Taken apart from their context these statistics might be made to prove anything, but when the particular conditions influencing each group of cases are taken into consideration any general deduction seems impossible, except that in a comparatively insignificant number of cases disease might have been prevented had more thorough precautions been taken in the method of handling and distributing the milk. If, however, this preliminary inquiry elicits no statistics which can be regarded as sufficiently conclusive for general deductions it at least emphasises the apparent indifference of medical officers of schools on the question of the milk-supply and of the precautions which might be taken to ensure its purity and freedom from contamination.

THE SALARIES OF POOR-LAW MEDICAL OFFICERS.

WE published last week a letter calling attention to the inadequacy of the salaries and fees paid to Poor-law medical officers and suggesting that the inquiries of the Poor-law Commission now sitting may possibly include this highly important subject. The writer further contrasts the small representation of the medical profession in the House of Commons with that of the Bar and asks whether this may be the reason why legal appointments are so much better paid than medical ones. Whether the question of medical salaries can be brought within the scope of the Commission seems doubtful, but it is certainly a topic which should not be forgotten in the event of new legislation following upon the Commissioners' report should any Bill so proposed deal generally with Poor-law administration. In such an event it is to be hoped that although numerically few the medical men who are now Members of Parliament will make their voices heard and their influence felt on behalf of a hard-working and ill-paid section of their profession—men who for the very reason that they are hard-worked and ill paid can exert but little influence in their own cause. It is rather difficult to draw comparisons between the emoluments of legal appointments and those open to medical practitioners, for the former if well paid, as no doubt they are, are much less numerous than the latter and are nearly always subject to conditions, such as the lapse of a given number of years since the date of call to the bar, which do not obtain in the case of appointments which can be held by any legally qualified medical practitioner. There may, however, be some truth in our correspondent's explanation of the present unsatisfactory scale of payment deemed sufficient for the medical man, whose education before registration is far more elaborate and far better qualified to fit him for the practice of his profession than that portion of the barrister's training which precedes his call. The number of barristers in the present House of Commons exceeds 100 and the sister profession of solicitors brings the tale to be included under the general heading of lawyers nearly up to 150. Many of these, like a substantial proportion of the members representing medicine, either do not pursue their profession at all or have not risen to eminence in it, but a large number of them are in active practice upon which they are dependent for their livelihood. In these circumstances it is likely that a proposal to reduce by one-half the fees of the revising barristers to whom our correspondent refers would meet with lively opposition and with the

forceful argument of a considerable number of adverse votes. If, however, the medical members of the House of Commons are outnumbered by the legal ones it is possible to suggest that among the working members of another learned profession they should find sympathy and support in all reasonable demands. Lawyers and medical men are drawn to a great extent from the same class; they are educated largely at the same public schools and the same universities confer degrees upon them after they have spent their days and followed their recreations as undergraduates together. It is the lawyer therefore, perhaps, more than the country gentleman, the ex-soldier, or the politician pure and simple, who should grasp the fact that what the medical man desires is neither wealth nor luxury, but simply the maintenance of conditions incidental to his birth and training and due to the dignity of his profession. He has been born a member of a class which, whether it can afford it readily or not, bestows upon its sons the education of gentlemen and that education he has pursued at considerable cost for an extended period owing to his determination to earn his living by practising medicine. The least that he is entitled to is such a pecuniary reward for his labours as will permit him to remain in the social plane in which he has been born and in which the associates of his early lifetime, also members of learned professions, are able to keep themselves and to bring up his family so that his sons and his daughters may fill stations not inferior to that occupied by their parents. In the near future, however, the attitude of those responsible for the government of the country, so far as it is guided by Parliament, will depend no doubt to an appreciable extent upon the chosen representatives of democracy as well as upon those whose birth and education may prompt them to sympathise with the needs of medical men. The democratic element in the House of Commons is a force to be reckoned with and upon some points—as, for instance, upon the question of vaccination—it is not likely to range itself definitely and unitedly on the side of progress. Where, however, it has to deal with such a question as that of the remuneration of Poor-law medical officers it may be expected to consider the arguments laid before it from the point of view of the patient, and not to turn a deaf ear to those who point out that better pay attracts better men or that the allowance of fitting fees for the operation or for the anæsthetic rendered possible by modern medical science contributes to lessen the suffering of the poor in need of surgical aid. The "labour member," at all events, will not accept the suggestion that anything is good enough for him who attends upon the worker and his family when they are unable to support themselves, and both the sections of the legislature referred to may be of opinion also that the best position for the Poor-law medical officer to occupy in the interests of his patients may be that in which he is comparatively independent of the prejudices and caprices of the classes from which, in many instances, boards of guardians are almost inevitably drawn. We need hardly add that if the position of the Poor-law medical officer is to be considered any projected amelioration should be accorded in equal degree to those serving in England, in Scotland, and in Ireland.

INFECTIOUS ILLNESS IN A SWISS HOTEL.

WE read in a newspaper published at Montreux a curious story of a case of illness at a Swiss Hotel, followed by a lawsuit, which is printed in our contemporary as a case of interest to inn-keepers and to their clients. We can only give the facts as narrated and read "between the lines." One of the younger members of a family from Geneva was, taken ill at the hotel in question and two English medical men who were also staying there diagnosed her case as one of

scarlet fever. It will be remembered that Englishmen may not practise medicine in Switzerland unless they hold Swiss diplomas, and presumably on this account a native practitioner was called in but he did not consider the illness to be scarlet fever, and under his treatment the young lady recovered so far that at the end of a week she was removed to another place. Meanwhile, her illness, and, no doubt, the opinion held with regard to it by the English medical men, had caused alarm among the visitors to the hotel and it is not unlikely that the innkeeper, too, as he alleged, been injuriously affected thereby. His action, however, was brought not against the foreign medical men who, had their diagnosis been proved to be incorrect, might reasonably have been considered to be responsible, but against the parents of the young lady, from whom he claimed damages and expenses on account of the illness of their daughter in the hotel. The court at Geneva rejected his claim entirely and found for the defendants and an appeal lodged in by the unsuccessful plaintiff has also been dismissed. We have no doubt that the Swiss courts arrived at a thoroughly just and proper decision as between the innkeeper and his guests. From the point of view of the travelling public the story of the diagnosis of two English medical men over-ruled and disregarded in the manner described is a little disquieting, and we would point out to those responsible for the restrictions upon medical practice in Switzerland that the confidence of the vast number of foreigners who frequent and support Swiss hotels would best be maintained by the removal of these narrow and inhospitable regulations. The Swiss themselves might reasonably be expected to prefer the attendance of their own countrymen and would no doubt continue to do so.

"FRAUDULENT FOAM."

A CORRESPONDENT writes with reference to an annotation on this subject last week:—An article on the saponins by Dr. Bourset and Dr. Chevalier, which appeared in the *Bulletin des Sciences Pharmaceutiques* (1905, No. 5, pp. 262-70), bears directly on the employment of saponin for producing foam in beverages, which was referred to in THE LANCET of Feb. 3rd, p. 312. The authors of the paper call attention to the varieties of saponin; their mode of extraction and purification, the method of determining their strength, and their reactions, uses, and physiological properties. As regards the varieties of saponin, no less than 150 glucosides having the properties of saponin were enumerated by Nicolai Knskal in 1891. Robert discovered that the saponins can be divided into two classes—viz, acid saponins, which are scarcely toxic, and neutral saponins, or sapotoxins, which are very toxic; the saponins of commerce is usually a mixture of these. Their separation is readily effected by ammonium sulphate which precipitates the acid saponins from an aqueous solution without affecting the sapotoxins. Dr. Bourset and Dr. Chevalier call attention to the enormous demand in brewing for saponin, obtained from species of *Gypsophila*. In Austria the practice of adding saponin to beverages became so prevalent that a law was passed to prevent it. In pharmacy tincture of quillaya is used to emulsify oils—e.g., turpentine and castor oil. The stimulatory action of saponin has led some traders to prepare a substitute for snuff by mixing powdered quillaya bark with various vegetable powders. With regard to the physiological properties of saponin it loses the greater part of its strength during the drying of the plants from which it is obtained and during the process of extraction. This accounts for the fact that serapapilla, as found in this country, is often inert, while in Mexico, the habitat of the drug, it is considered extremely active. When injected into the blood saponin is fatal in doses of from 0.0002 to 0.0005 gramme per

kilogramme, producing paralysis of the central nervous system and failure of the cardiac and respiratory actions; gastro-intestinal inflammation is also induced, ending nearly always in perforation. The saponins are less toxic when administered per os, but they cause catarrh of the mucous membrane, swelling and irritation in the nose, mouth, and throat, and coughing. It is for this reason that saponins have been employed as emetics and expectorants. The saponins also stimulate the secretions and especially promote diuresis, owing partly to their irritating action and partly to their effect on the circulation. It is evident from the researches of Robert and others that saponin, as met with in commerce, is liable to vary in constitution and in toxicity. For pharmaceutical use as an emulsifying agent it is therefore quite unsuitable. A consideration of the subject suggests that the variation in strength of quill and other drugs containing saponins may be due to changes in those constituents, depending partly on the age of the drugs and partly on the mode of extraction employed in making the corresponding galenical preparations.

FOREIGN BODY IN THE SUBMAXILLARY DUCT

In the *New Zealand Medical Journal* for October and November Mr T. Copeland Savage has published two very interesting cases of bodies in the submaxillary duct which gave rise to errors of diagnosis. He describes them as cases of "foreign bodies in the submaxillary duct." But the first was an example of salivary calculus to which the term "foreign body" seems scarcely applicable. A woman, aged 24 years, was taken to him for otorrhoea and a tender swelling beneath the left ramus of the jaw. The membrana tympani and the malleus had disappeared. The stapes and incus were carious and the mastoid was very tender. Beneath the left ramus of the jaw, extending back as far as the angle, was an oval swelling, rather hard, indefinitely lobulated, and tender. It had been diagnosed as tuberculous glands secondary to the ear disease. In palpating the swelling through the mouth a hardness was felt near the left submaxillary papilla. On being asked whether the swelling ever varied in size the patient said that it did when she ate. The floor of the mouth was swabbed with cocaine and the submaxillary duct was incised over the swelling with a cataract knife until the orifice was reached. A salivary calculus escaped. The swelling disappeared in two or three weeks. In the second case a woman, aged 25 years, sought advice on August 15th, 1905, for a discharging sinus above the hyoid bone and half an inch to the right of the middle line, and a swelling beneath the right ramus of the jaw. The history was that nine months before she noticed a swelling beneath the right half of the chin. It gave little trouble until April, when it became very large and red. In May it was lanced and much pus escaped, but the incision never closed. Twice within the last three months the swelling was lanced from inside the mouth. The swelling beneath the jaw was firm and but slightly tender; the skin was not adherent. On probing the sinus a hard substance was felt at the depth of one and a half inches. The patient was edentulous and in the floor of the mouth was a hard, irregular swelling along the course of the submaxillary duct. Near the posterior part of the swelling, opposite the position which had been occupied by the first molar tooth, was a sinus from which on pressing the floor of the mouth clear viscid secretion and some saliva escaped. A probe passed downwards and backwards struck the hard substance mentioned above and passed forwards and appeared to enter the submaxillary duct, but it could not be passed in this direction more than half an inch. Mr. Savage diagnosed submaxillary calculus and advised removal by enlarging the external sinus on account of the dangerous proximity of the lingual nerve. Under chloroform he removed with considerable difficulty a

wisdom tooth from the posterior part of the submaxillary gland and duct. The fangs were broken and there was a small cavity in the crown. The external wound closed in eight days but as the fistula in the mouth closed a ranula developed. This was opened under cocaine and a silver wire was passed into the incision through a stricture in the duct and out through the salivary papilla. This was kept in for a few days and then the fistula was allowed to close. The patient had no trouble subsequently and the duct acted normally. On being questioned she stated that she had had teeth extracted four years before the operation and had some recollection of hearing the dentist say, "She must have swallowed it." Three months later there was an abscess on the inner angle of the jaw which was opened through the mouth. The operation was repeated twice in the next year and then she was free from trouble for nearly two and a half years. The first case is interesting as showing that in the presence of otorrhœa a calculus of the submaxillary gland may easily be mistaken for an enlarged gland. The second case is exceedingly rare and shows the desirability of probing all sinuses in case of non-closure.

STREET NOISES AND MOTOR OMNIBUSES.

THE persistent complaints of the press as to the amount of totally unnecessary noises which afflict the dwellers in large towns have apparently had some effect. Various municipalities have made by-laws as to the yelling of newspaper vendors and certainly some improvement has taken place with respect to this particular nuisance. But with the advent of the newest means of locomotion a fresh terror has arisen—namely, the irritating noise caused by motor omnibuses. Whether owing to worn gearing or to the mechanism of the breaks, or, as is most likely, to both, the motor omnibus is capable of producing more abominable noises than any other vehicle with which we are acquainted. Everyone must have noticed the harsh grinding "scoop" of a motor omnibus and it must be due, we suppose, to defective mechanism. We are glad, therefore, to see that Mr. E. R. Henry, the Commissioner of Police for the metropolis, has issued a notice to proprietors of motor omnibuses dealing with the conditions necessary in order to obtain a certificate of fitness. Among other conditions laid down it is enacted that the machinery must be so constructed that no undue noise or vibration is caused and that some effectual means must be provided to prevent the rattling of window frames or glass. There are plenty of petrol-driven motor-cars on the streets which make practically no noise and if noise can be prevented in one class of car it is most probable that there is no reason, except expense, why it should not be prevented in all classes. As a matter of fact, the newer class of motor omnibuses make much less noise than those which have been plying for hire for some time. This, of course, may be due to the fact that the machinery of the former is new but we hope that it is due to improvement in the mechanism. At all events, if noisy machinery causes a difficulty to be experienced in obtaining a licence the proprietors of motor omnibuses will soon find a way of remedying the nuisance.

WHAT IS WHISKY?

THE ultimate decision of this question seems to be as far off as ever as regards, at any rate, any definite pronouncement being forthcoming in the proceedings at the North London police court. On Monday last the witnesses who were called for the defence again represented chiefly the distillery trade. At the commencement of the proceedings, however, the evidence of "a retired revenue officer" was taken. He said that he joined the service in 1862 and during his career he had examined, with two exceptions, all

the patent stills in the United Kingdom and also a large number of pot-stills. Patent-still whisky had been known simply as whisky for a long number of years and when made or blended in Scotland he thought it was correct to call the spirit Scotch whisky. Asked whether there would be any difficulty about describing the composition of a whisky on the label of the bottle he thought that it would be impracticable, and even if that plan were adopted the public would be no wiser. Mr. F. J. Stevens, the managing director of a firm of Scotch distillers, said that he considered that a blender would be quite justified in describing a mixture containing 2 per cent. of pot-still whisky with the remainder of patent-still spirit as "a blend of malt and grain whisky" but he had never done so. Mr. John MacDonald, representing another firm of distillers, said that they had produced pot-still whisky alone but during the last 20 years a great change had come over the public taste. The demand for all-malt whisky had declined to such an extent that probably 90 per cent. of the whisky sold was blended. In the course of further evidence it was elicited that the sample under question consisted of 90 per cent. of patent spirit one month old and 10 per cent. of pot-still spirit three years old. The hearing was again adjourned.

THE PSYCHOSES OF PEASANTS.

A PAPER of some interest is published in *Le Progrès Médical* of Jan. 20th by Dr. Terrien in which he compares the frequency and the character of the "psycho-neuroses" affecting the dwellers in rural districts with those of urban populations. Contrary to what might have been expected from the healthier conditions of life and the less exacting struggle for existence among the prosperous peasantry he finds that hysteria and neurasthenia are if anything more prevalent among them than among town dwellers. He has spent 12 years among the peasantry of La Vendée and then subsequently four years in an urban district, so that his conclusions are the result of personal observation of the two classes. He states that hysteria and neurasthenia are extremely frequent among the peasants and brings forward certain explanations to account for this prevalence. In the first place he points out that large numbers of the peasants drink as much as five or six litres of the wine produced in their own district and that drunkenness is very common, although chronic alcoholism and spirit-drinking are rarely met with. Dr. Terrien suggests that one effect of this is to produce a taint of degeneracy in the offspring, with an associated instability of the nervous system. He further believes that the superstitions which are so deeply rooted in the minds of the peasantry from their earliest childhood are also a factor in the production of these psychopathies and may contribute to the genesis of actual delusions. Another contributing cause is probably also the frequency of marriages of consanguinity among the peasantry. Dr. Terrien also believes that the personal hygiene of the dwellers in rural districts is rudimentary and that as a consequence they are more liable to infections and auto-intoxications which he believes can play a part in the development of such mental changes. Lastly, he suspects that the life of the peasant is no longer so idyllic as in former times and free from the worries and stress of competition but that the struggle for existence is becoming keener. On studying the manifestations of hysteria in the rural population Dr. Terrien finds that imitation plays a more direct part in the genesis of hysterical manifestations than is the case among dwellers in towns and he quotes various instances in support of his contention, notably in one village, where six young girls developed "hysterical hip" after seeing a genuine case of hip disease. On the other hand, hysterical fits or convulsive attacks are extremely rare. A further point is that the hysterical patient in the country

is more amenable to treatment, especially treatment by suggestion, than those in towns. The neurasthenia of peasant life, however, differs little if at all from that of urban life, except that the peasant less often complains of mental disability and more often of physical manifestations, such as weakness, pain in the back, and dyspepsia. Dr. Terrien's observations and his conclusions are both worthy of careful consideration and afford matter for careful statistical investigation. Even admitting the accuracy of his statement that such conditions as hysteria and neurasthenia are on the increase among the peasants, it may be doubted whether his explanations entirely account for it, since the drinking of wine in excessive quantities, the belief in superstitions, and the intermarriage of relatives are presumably factors which have long been in operation and are not necessarily on the increase; indeed, intermarriage and belief in superstitions might be expected to be on the decrease owing to the better education and the easier means of communication now existing.

SEPTICÆMIA DUE TO THE SPIROCHÆTA PALLIDA IN A SYPHILITIC NEWLY BORN CHILD.

THE recent discovery of the spirochæta pallida in the lesions and in the blood of patients suffering from syphilis is a most important advance, though it cannot yet be said whether this organism is the cause of the disease. At the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 29th, 1905, M. P. Menetrier and M. Rubens-Duval reported the following case in which the finding of this organism in the blood threw much light upon the cause of death which otherwise would have been difficult to explain. A male infant born at term presented as the only sign of congenital syphilis three or four bullæ on the sole of each foot. Otherwise he appeared to be quite normal. The placenta showed nothing on macroscopic examination. Death occurred 12 hours after birth. At the necropsy the only organ which attracted attention was the liver, which was greatly enlarged, congested, and of a violaceous red colour. The other organs showed only congestion, but in none was this so great as in the liver. Microscopic examination of the bullæ on the soles showed that these lesions were due to cleavage of the horny layer of the epidermis and contained a large number of desquamated cells, among which were a large number of spirochæta pallida. They were also present in less numbers in the Malpighian layer of the skin and in the papillary layer and in the blood-vessels of the dermis. In the latter some were seen in the lumen of the vessels in the midst of red corpuscles, others were in contact with the vascular endothelium, and still others were traversing the walls and passing out of the vessels. Thus the formation of the bullæ was explained: the spirilla were brought to the skin by the blood; they traversed the vessels and then the epidermis. In the latter, no doubt, encountering conditions favourable to their development, they proliferated abundantly. Of the viscera examined the spirochæta were found in greatest number in the suprarenal capsules, where they were most numerous in the vessels, the walls of which they were also traversing. The only other change observed in the suprarenal glands was considerable congestion of the capsules. Similar conditions were found in the liver and the spleen. Thus the infection had been generalised by the blood, a veritable septicæmia being produced and the tissues infected, but the only lesions produced were the bullæ on the soles. In the placenta, which was placed in hardening fluid immediately after delivery, the spirochæta were found only in the tissue of the infant. This might be accounted for by the fact that the latter had lived 12 hours longer than the

former. Another interesting fact was that in the placenta the spirochæta were found only in the chorionic villi, being thus confined to the foetal blood. The importance of the finding of the spirochæta in this case is great. It showed the cause of death—syphilis in a form which has not previously been recognised, a subacute infection of the blood similar to that of anthrax.

VAGRANCY AND ITS CURE.

A RETURN of vagrants in the northern counties has recently been published which gives some interesting information on a subject which has always been a matter of concern not only to the guardians but to the public health authorities, for in the last outbreak of small-pox in the North the spread of the disease was frequently traced to the nomadic population of our counties, and this was also the case in a less well-known outbreak of typhus fever which occurred some few years ago in the Hexham union. The return in question deals with the first seven weeks of the December quarter of 1905 and comparison is made with the corresponding period of 1904. In the county of Durham there was a net decrease of 528 vagrant persons, while in Northumberland there was a decrease of 107. Of course, this decrease is not equal in all the unions and in many of the larger ones there has been an increase. In the remarks made by the various workhouse masters concerned this increase is usually explained by the excess of unemployed but some light is thrown on the matter by the workhouse master of Berwick-upon-Tweed, who attributes the decrease in his union to "the supposition that the effect of the Unemployed Workmen Act and Queen Alexandra Fund is to attract the casuals to the large centres to share in the benefits derivable from the Act and Fund in question." The most remarkable feature of the report is the great decrease in South Shields, from 763 in 1904 to 402 in 1905. The authorities seem satisfied that this pleasing result is due to the introduction of a number of work cubicles which act as a powerful deterrent as well as providing a class of employment which is remunerative and decidedly better than stone-breaking. The task imposed consists of pounding a certain quantity of stone practically to powder, which is done in a metal mortar simply by the continuous lifting of a beater. The product is useful for repairing purposes, concrete making, and so on; what is not required in the house can be sold at a reasonable price. The cells are plain brickwork and are built by the inmates; the mortars cost about £3 each.

ADULTERATED DRESS FABRICS.

OUR indictment of a certain section of the manufacturing trade and of the drapers and hosiery, published in THE LANCET of Jan. 6th, p. 49, has drawn a leading article from the *Drapers' Record* in which our conclusions are largely confirmed. Our contemporary says that it is heartily against fraudulent adulteration and supports the movement for calling things by their right names. It admits that a very large number of articles commonly spoken of as "woollen" and "linen" are made of materials of which the substances indicated form only a small part. An endeavour is made, however, to defend the drapery trade in its attempt to justify the application of such words as "linen" to goods which contain cotton on the grounds that when we use the terms "table linen" and "bed linen" in common parlance we include all materials used for that purpose whether made of linen or cotton. We should like to be informed by the drapery trade why mixtures are always called by the name of the superior material? Why is "span silk," which may be more than 50 per cent. cotton, not called "span cotton"? With regard to imitation fabrics

our contemporary says that customers know quite well what they are buying but careful inquiry has shown us that this is not true in nine cases out of ten. As regards the poisonous properties of many adulterated fabrics our contemporary says that if this were the case we should hear of many legal actions for damages caused by them. We do not consider that this follows at all; under modern conditions many people suffer from a chronic state of ill-health and minor ailments which, if we could trace them back to their causes, might be found to be the results of adulterated foods and sophisticated wearing apparel. Altogether we think that the *Drapers' Record* makes a very poor defence.

LIFE TABLE FOR THE CITY OF NORWICH.

Dr. H. Cooper Pattin, the medical officer of health of Norwich, has favoured us with a copy of his new life table based on material furnished by the population of that city in the decennium 1891-1900. In a preface to the life table, which has been published by the Norwich health committee, Dr. Pattin assigns the entire credit for its production to his late assistant and deputy, Dr. Arthur W. Tuxford, who has devoted to the task "arduous and ungrudging labour." The method of construction of this life table is fully set forth in the introduction; but as it is avowedly modelled on the plan of the second life table of Dr. A. Newsholme and Dr. T. H. Stevenson of Brighton it is unnecessary to describe it in detail here. Dr. Tuxford specifies the following as among the chief uses of a life table. First, as a means of determining, by the laws of probability, the expectation of life in a given community on the assumption that "environment" remains constant. Secondly, as a measure of the sanitary progress of a district. For example, if two or more districts possess life tables for the same period, a comparison of the figures will supply a criterion of the relative healthiness of these districts. And further, as shown by Dr. T. E. Hayward, the medical officer of health of Haydock, life tables may be used to show what would be the effect on the longevity of a population of the elimination of pulmonary tuberculosis; for example, among the more definitely preventable of the causes of death. In his analysis of the results of his Norwich table Dr. Tuxford compares them with Dr. Hayward's latest English life table as well as with Sir Shirley F. Murphy's London life table and with the second life table for Brighton before referred to. From this comparison we learn that, for males, the probability of living through the first year is less in Norwich than elsewhere; as compared with London it is less by 3 per cent. During the second year the probability improves relatively and in the third year it is the highest among the tables compared. The relative values fluctuate between the ages of three and 25 years, after which latter year Norwich leads up to the age of 64 years, when the Brighton values become the highest. The figures for London and for England do not exceed those for Norwich until the eightieth year of life, after which the Norwich figures are the worst. For females the results of comparison are similar to those for males. The probability of living through the first year is worst in Norwich but the deficiency as compared with London is only about half that for males. The probability of living through the second and third years is greatest in Norwich. Up to the age of 79 years the Norwich probability values are better than those of the country generally; between 29 and 80 years they are better than in London. They vary compared with Brighton, the only lengthy excess of Norwich figures being in the fifth and sixth decades. In his prefatory remarks Dr. Pattin expresses regret that so few of the great towns have hitherto issued life

tables. For ourselves, however, when we contemplate the serious amount of labour required to produce an extended life table on the lines of those already published, we are doubtful whether the medical officer of health of a large town possesses the necessary leisure, due regard being had to the execution of his other and perhaps more important duties. It deserves to be borne in mind that the great towns of England are by no means in all cases so fortunate in possessing an assistant health officer as is the city of Norwich, and until such appointments become general we fear that Dr. Pattin's regret will have to remain an academic one. There is, however, an alternative method, which has been devised by Dr. Hayward, of constructing shortened life tables for public health purposes, by which the labour of construction is enormously reduced and the mathematical equipment required is limited to ordinary algebraical processes, including a good working acquaintance with the use of logarithms. Whilst, therefore, in principle we incline to Dr. Pattin's view that the use of life tables for public health purposes deserves encouragement we are convinced that this desideratum is most likely to be secured by the diffusion of knowledge concerning the least laborious methods of life-table construction on the lines so well set forth by Dr. Hayward in his essay on the construction of shortened life tables for public health purposes to which we have referred and which will be found in Vol. V of the *Journal of Hygiene* for January, 1905.

THE PLEA OF "NO BOOTS."

MANY and often curious are the excuses offered by parents summoned before the attendance committees of managers of elementary public schools in poorer districts for allowing their children to absent themselves from school or to be irregular in attendance. One of the most constantly occurring explanations volunteered, especially at this season of the year, is that the children have no boots, or, at least, have very bad boots. Occasionally this statement is found to be a mere prevarication, reflecting upon the known slackness in the régime of the local attendance authority, for the parents have in fact detained the child for home services, especially is this the case when the scholar approaches the age when school attendance will be no longer compulsory. Too often, however, the facts alleged are true. The father may have been long out of work and unable to repair or to renew the boots of his family; indeed, it is not unknown that boots provided for the children out of charitable funds have been immediately pawned in order to meet the dire necessities of the house. Upon the defaulting parents being informed that absence of boots does not excuse absence from school, various arguments are put forward. A popular and not unworthy defence is that to send a child to school barefooted would disgrace the child as well as offend the social standard of the neighbourhood; it would look very bad. Driven from this line of defence by being told that many children do attend school without boots, especially those coming from "Irish quarters," the parents raise the specious objection that the child's health would be endangered; he would catch cold, develop chilblains, or cut his feet to pieces. In reply it is urged that these children stay from school whether the weather be wet or dry; that they have no diffidence in playing about the streets, and that their infant brothers and sisters in midwinter are sent to the "babies' class" with their chubby little arms bare. Further, from the health standpoint it is far preferable in wet weather to have no boots than to be so ill-shod that the child has to sit with wet, cold boots. Teachers should indeed be instructed to have such soggy wet-leather coverings of the feet removed as soon as the child enters the school. There is little chance then of harm resulting, for in the warm classroom the legs and feet will

soon dry and regula their natural heat. In the case of the very poor who look for relief from the parochial guardians, while they are being aided it is made a *sine qua non* that their children shall not be irregular in their school attendance.

THE DANGER OF USING SCOPOLAMINE AS AN ANÆSTHETIC.

THE employment of scopolamine as an anæsthetic, to which reference was made in THE LANCET of Dec. 30th, 1905, p. 1222, is losing favour in France. At a meeting of the Société de Thérapie de Paris¹ M. Bardet drew attention to cases in which the injection of one milligramme (0.016 grain) of scopolamine and one centigramme (0.16 grain) of morphine has provoked grave symptoms of poisoning and even death. He considers that the initial dose of scopolamine should not exceed one-tenth or two-tenths of a milligramme. In subjects who do not readily tolerate alkaloids owing to the lowering of the antitoxic function of the liver special care should be taken in administering scopolamine and morphine. It was pointed out that Pouchet and Lewin gave the toxic dose of scopolamine as one milligramme. A further disadvantage in the employment of scopolamine consists in the fact that, as found in commerce, it is not always identically the same in constitution; the toxicity of different samples of scopolamine may therefore be expected to vary.

PROPOSED MEMORIAL TO THE LATE PROFESSOR VON MIKULICZ-RADECKI.

THE following gentlemen form an international committee having for its object the raising of a monument to the late professor of surgery at Breslau:—Bernhard Erbprinz von Sachsen-Meiningen, Herzog von Sachsen; Oberbürgermeister Dr. Bender; Wirkl. Geh. Rat. Dr. E. von Bergmann, Berlin; Staats- und Justizminister Beseler, Berlin; Polizeipräsident Dr. Bienko; Dr. O. Borchgrevink, Christiania; Mr. F. M. Caird, Edinburgh; Hofrat Professor Dr. Carl Chun, Leipzig; Geh. Justizrat Professor Dr. Felix Dahn; Generalarzt Dr. Demuth; Professor Dr. Depage, Brussels; Dr. G. Dohrn, Dir. des Orchester Vereins; Professor Dr. F. Durante, Rome; Konsul Theod. Ehrlich; Hofrat Professor Dr. Freiherr von Eiselsberg, Vienna; Geh. Regierungsrat Professor Dr. Foerster, Vorsitzender der Schles. Gesellschaft für Vaterländische Kultur; Geh. Justizrat Dr. Freund; Geh. Medizinalrat Professor Dr. C. Garé; Professor Halsted, Baltimore; Oberkonsistorialrat Professor Dr. von Hase; Dr. Fürst von Hatzfeldt, Herzog zu Trachenberg; Dr. Jur. G. Heilmann; Regierungsrat Präsident Wirk. Geh. Obergerichtsrat von Holwede; Professor Dr. Kader, Krakau; Dr. F. Kammerer, New York; Professor Dr. G. Kaufmann, z. Z. Rektor der königlichen Universität; Professor W. W. Kern, Philadelphia; Professor T. Kocher, Basle; Dompstabs Professor Dr. Koenig; Geh. Sanitätsrat Professor W. Körte, Berlin; Sanitätsrat Dr. T. Körner; G. Kardinal Kopp, Fürstbischof von Breslau; Stadthalter Heinrich von Korn; Geh. Medizinalrat Professor Dr. Küstner, Dekan der Medizinischen Fakultät; Geh. Regierungsrat Professor Dr. Ladenburg; Professor Dr. Lejars, Paris; Professor Dr. K. Lennander, Upsala; Geh. Justizrat Professor Dr. Leonhard; Wirk. Geh. Rat. Graf zu Limburg-Sturum; Mr. G. H. Makins, London; Professor P. Meyerheim, Berlin, Mitglied der Akademie der Künste; Gen. à la suite und Kommandant von Berlin, Graf Mohke; Professor J. B. Murphy, Chicago; Professor Dr. Naunyn, Strassburg; Geh. Medizinalrat Professor Dr. Nieser; Dr. A. Piosker, Vienna; Hans Heinrich XV., Prinz von Piess; Geh. Medizinalrat Professor Dr. Porfck; Herzog von Ratibor; Landeshauptmann

Freiherr von Richthofen; Geh. Sanitätsrat Dr. Senfleben; Professor Dr. Sombart; Professor Dr. A. Tieze; Graf von Tschirschky-Renard; Geh. Medizinalrat Professor Dr. Uthoff; Professor Dr. A. von Winwarter, Lüdtich; Professor Dr. Woelfer, Prague; Gen. der Infanterie und Kommandierender General der VI. Armeekorps von Woyrsch; Oberpräsident und Universitäts Kurator Staatsminister Graf von Zedlitz-Trützschler. Probably many of the late Professor von Mikulicz's admirers and members of the profession who visited his clinic at Breslau may wish to take part in this movement. Subscriptions in aid of the necessary fund may be sent to Mr. G. H. Makins at 47, Charles-street, Berkeley-square, London, W.

On Feb. 1st, at the École de Psychologie, Rue St. André-des-Arts, Paris, a bust of Dr. Liébeault, the pioneer of hypnotic therapeutics in the city of Nancy, was unveiled before a distinguished company. M. Bienvenu-Martin, Minister of Public Instruction, who was accompanied by M. Berthelot, presided and addresses were given by Dr. J. Voisin, Dr. Bérillon, Dr. Maul Magnin, Dr. C. Lloyd Tuckey, and Dr. Raymond. A poem in honour of Dr. Liébeault, by M. Jules Bois, was afterwards recited by M. Paul Mounet of the Comédie Française. The proceedings terminated with a banquet in honour of the foreign guests at the Marquetry Restaurant.

In his reports presented to the sanitary committee of the City of London for the period from Nov. 18th, 1905, to Jan. 23rd, 1906, Dr. William Collingridge, the medical officer of health, mentions that in November last a medical man notified an illness affecting a beer-drinker as being probably connected with arsenical poisoning. Samples of the description of beer drunk by the patient were accordingly obtained from three public-houses which he patronised and all of them were found to contain minute traces of arsenic not exceeding 1/10th of a grain per gallon. This small quantity of arsenic is not likely to be injurious, except possibly in the case of very susceptible persons.

THE medical officer of health of the Cape Colony reports that for the week ending Jan. 13th the condition of the Colony as regards plague was as follows. No case of plague in man or other animal was discovered throughout the colony except at Port Elizabeth where two rats and one mouse were found to be infected with plague. As regards the Mamlitas a telegram from the Governor received at the Colonial Office on Feb. 2nd states that for the week ending Feb. 1st there were 2 cases of plague and 1 death from the disease.

A GENERAL meeting of the Medical Officers of Schools' Association will be held at 11, Chandos-street, Cavendish-square, London, W., on Thursday next, Feb. 15th, at 3.45 P.M., when a discussion on Physical Education in Schools will be introduced by Dr. W. P. Herringham and Mr. T. C. Horsfall.

THE Princess Royal has consented to lay the foundation stone of the new wing now being built at the Bolingbroke Hospital, Wandsworth Common.

A visit to London has been arranged for the famous Paris Municipal Guards Band, this being the third occasion on which the band has played in London. A series of promenade concerts have been fixed to commence on Saturday evening, Feb. 17th, at the Opera House, Covent Garden. The net proceeds of the performances will be devoted to the Queen's Fund for the Unemployed, the French charities in London, and the Red Cross Disaster Fund.

¹ Journal de Pharmacie et de Chimie, 1906, No. 10, p. 474.

THIRTEENTH ANNUAL REPORT (FOR
1904) OF THE MEDICAL OFFICER OF
HEALTH OF THE ADMINIS-
TRATIVE COUNTY OF
LONDON.

I.

WE now resume consideration of Sir Shirley F. Murphy's report, dealing particularly with those portions of it which for lack of space we were precluded from noticing in our leading article of Jan. 20th, p. 171.

A cursory review of the series of public health reports, whereof the present is the thirteenth, reveals the fact that whereas the earlier numbers were principally concerned with recording the loss of life caused by the various epidemic maladies which, in the absence of recent methods of control were at that time more or less rife in the poorer parts of London, the present number, on the other hand, whilst still preserving a continuous record of the occurrence of these maladies, treats as of at least equal importance from a preventive standpoint the question of the prevalence of such chronic diseases as tuberculosis and cancer, diseases which in the early days of sanitation were considered hardly amenable to sanitary control but which are still in the aggregate responsible for an excessive proportion of our annual mortality. The London County Council could hardly desire a more complete justification of its preventive achievements than the circumstance prominently apparent in the present report, that with respect to every one of the diseases hitherto brought under notification influence a substantial decrease of fatality, and inferentially of prevalence, has taken place since the issue of Sir Shirley Murphy's first annual report. As a typical instance of life saving accomplished by skilled municipal vigilance the case of typhus fever may be cited—a disease which in earlier years was wont to destroy large numbers of the poorer classes of the community and to entail untold misery and destitution on the survivors. With regard to this pestilence the county medical officer is able to affirm that in the year 1904 not a single death was caused by it in the administrative county of London.

In order to reserve space for consideration of what appears to be the most important topics in this report it is necessary to pass lightly over the record of diseases that are not at present notifiable during life, and we do so the more readily inasmuch as the Registrar-General has already dealt fully in his annual summary with London mortality from such diseases as measles, whooping-cough, and diarrhoea. The abnormally low rate of marriage and of birth and the still favourable general death-rate are matters that have also been sufficiently discussed in the publication referred to.

With respect to small-pox, Sir Shirley Murphy reports that in London this disease has assumed a mild type but has, nevertheless, maintained some degree of prevalence during the year 1904, especially in the eastern, central, and southern districts. Throughout the previous year fresh cases of small-pox had been notified week after week, 22 attacks having occurred in the closing week of that year. In 1904, however, the attacks were few and scattered until towards the end of February; but in March they increased somewhat suddenly, a man suffering from unrecognised small-pox having obtained admission to a Whitechapel common lodging-house and thus led to a local spread of the disease. It was mainly at the end of the first and the beginning of the second quarter of the year that small-pox threatened to become seriously prevalent in the metropolis, as many as 53 fresh attacks having been notified in a single week at the end of March. The common lodging-house populations of Poplar, Stepney, and Bethnal Green seem to have been concerned chiefly in spreading infection at this period and the report gives interesting details of the insidious manner in which widespread mischief was caused by a single unreported case of hæmorrhagic small-pox. At this stage of the outbreak the borough council of Bethnal Green made an order for the notification of chicken-pox within its jurisdiction, which order came into force at the end of March. Shortly after this the county council made a similar order, so that from the beginning of April until November chicken-pox became a notifiable disease throughout the metropolis. Moreover,

the county council appointed Mr. S. Bingham and Mr. W. McC. Wanklyn as experts to visit at the request of medical practitioners any doubtful case of small-pox occurring in London. This well-timed and energetic action on the part, first of the Bethnal Green local authority and then of the London County Council, had the desired effect, for the report tells us that a diminution of the attacks reported in each week at once commenced and that in the subsequent months they became fewer and fewer, only one case being recorded in the whole county between Sept. 24th and Nov. 12th. The preventive measures adopted during the year, in addition to those already mentioned, included the speedy removal to hospital of infected persons, the keeping of "contacts" under observation, and their vaccination whenever practicable. Medical officers of health freely communicated with one another the occurrence of fresh foci of infection and promptly reported to the central authority at Spring-gardens the addresses of "contacts" still at large for the information of their colleagues in other parts of the metropolis. As in previous years, unrecognised cases of small-pox, mistaken for chicken-pox, played a large part in the dissemination of the disease. Sir Shirley Murphy speaks appreciatively of the assiduity with which the local medical officers of health sought for "contacts" and unrecognised cases of small-pox in their several districts, expressing the opinion that the thoroughness with which this was done was largely instrumental in controlling the spread of the disease.

Scarlet fever appears to have been somewhat more prevalent in 1904 than in the immediately preceding year, though, as compared with the decennial average, the notified cases, some 13,000 in number, were still considerably fewer. Commenting on the diminished prevalence of scarlet fever in recent years the county medical officer expresses the belief that this circumstance, albeit desirable in itself, has produced the untoward effect of obscuring, in particular instances, the source of infection. In various parts of London the spread of the disease has been traced directly or indirectly to school attendance, whilst in others infection seems to have been communicated from convalescents to the healthy in the streets or in school playgrounds. On July 21st the summer holidays of the London County Council schools began and the schools were reopened on August 22nd. In the text of the report the effect of holiday influence is contrasted with that of school influence, with the result obtained on previous occasions—namely, that the re-assembling of children in school after the vacation is attended with increased spread of infection. On the other hand, the opposite effect is produced by school closure and this effect is especially noticeable among children at ages from three to 13 years. In the familiar table giving the age and sex distribution of scarlet fever we note that although the *prevalence* of the disease is greatest from the third to the sixth year of life, nevertheless the *fatality* is by far the highest among children under the age of two years. In 1904, as in previous years, not only the rate of attack but the rate of mortality and the case fatality also were higher in male than in female children.

With respect to diphtheria, the increased prevalence of which disease a few years since had caused considerable anxiety in London, Sir Shirley Murphy is able to report a still further decline in 1904, the proportion of attacks to population being lower than in any year since 1900. As in previous years, he recounts in the present report particular instances of the spread of diphtheria from person to person by means of intermediary persons who, although capable of communicating infection to others, do not themselves present obvious symptoms of the disease. The annual report in the appendix of Dr. J. Kerr, the education medical officer, also contains account of the finding of "carrier cases" among children attending schools invaded by diphtheria, the exclusion of which children led to the termination of the outbreak. Very obvious is the need for careful search in cases like this for "carriers" among diphtheria "contacts" both in school and at home. As in previous reports, a table is here included showing the relation of school attendance to the spread of diphtheria; the lesson taught is the now familiar one that with every care on the part of the education authorities a marked increase in diphtheria prevalence invariably marks the reopening of schools and a corresponding decrease follows their closure for the holidays. According to the report a supply of antitoxin for the use of medical practitioners is provided gratuitously by the municipal authorities of certain parts of London but not by all. The

incidence of diphtheria attacks at all ages was, as in previous years, greater on females than on males. The incidence of deaths at all ages was the same on both sexes, while the case fatality was highest among males. Taking ages into account, the greatest incidence of attack was upon males of three and upon females of four years old; the greatest incidence of death in both sexes was upon infants of one year. The case fatality was highest among male infants under one year and among female infants of one year of age.

For several years past enteric fever has been steadily decreasing in the metropolis; in the year 1904 the reported cases were fewer in proportion to population than in any year since 1900. In the county generally the decline in the case-rate, death-rate, and case fatality has been maintained, but some London districts suffer practically twice as severely as others. Sir Shirley Murphy thinks that this may in part be due to differences in the food-supply, but that in all probability it is especially dependent on the habits of the people which induce the spread of infection from person to person. As has been observed in the case of pulmonary tuberculosis, the districts inhabited exclusively by the very poor suffer from enteric fever more heavily than do the districts inhabited by the well-to-do. Efforts to reduce this disease should, therefore, be directed to the discovery of persons suffering therefrom so slightly that, although infective to others, their own illness escapes recognition and notification. When regard is had to the long period during which the enteric fever bacillus persists in the urine of patients affected with that disease the frequency of this mode of infection can be appreciated. Not many years ago enteric fever was held to be non-infectious and cases of the disease were treated in general hospitals side by side with patients suffering from other diseases. In the present report, however, many instances are recorded of the spread of infection from one person to another. Thus in Bermondsey particulars are given of nine cases of the disease occurring in the same house, eight of which were directly infected by the first patient, the cause of whose illness was unknown. In Finsbury, Shoreditch, Wandsworth, Woolwich, St. Pancras, and elsewhere instances of this kind are recorded, in one of which no fewer than 14 attacks appeared to be due to infection from a single antecedent case. In several parts of London various articles of food have come under condemnation as carriers of enteric fever infection. Thus in a single year shell-fish was the suspected vehicle in nine cases in Finsbury, in eight cases in Bethnal Green, in 12 in Poplar, in 23 in Lambeth, in six in Battersea, in 11 in Wandsworth, and in 13 in Greenwich. In addition to oysters, cockles, and mussels among so-called shell-fish, other suspected articles of food were watercress, fried fish, and ice-cream.

As regards the incidence of enteric fever upon the several ages we learn from the report that although in proportion to population the attacks were most frequent in both sexes at ages between 10 and 15 years, the deaths occurred most frequently in men from 25 to 35 years of age and in women 10 years earlier. The case fatality, however, was highest among men from 35 to 45 years old and among women beyond their fifty-fifth year.

(To be continued.)

THE TURVEY TREATMENT, THE LEON SYNDICATE, AND THEIR CONNEXION.

WE have received from Mr. F. S. D. Hogg, the superintendent of the Dalrymple Home for Inebriates at Rickmansworth, the following letter which we publish with a full reply; for we think it our duty to our readers to give them the information, while the circumstances deserve to be brought to the attention of the General Medical Council:—

To the Editors of THE LANCET.

SIR,—I have received in common with probably many members of the medical profession an invitation from a Mr. R. M. Pooley to subscribe to the Leon Syndicate. This syndicate has been denounced by at least one financial paper, but whether it be an honest financial venture or a ruse for the conduct of a medical man in circulating the profession in behalf of such a scheme seems to me open to the profession's consideration. Please express my opinion on this point. I am, please permit me, of the opinion that I believe the

R. M. Pooley who signs it to be the consulting medical officer to a quack treatment for drink called the Turvey treatment. The sanatorium in connexion with this treatment is the Eden Hall Sanatorium, Woodford, the resident medical officer being a "Dr. Pooley." It seems to me that a member of the medical profession has no business to keep a sanatorium where patients are treated upon a quack system and I should like your opinion upon this point also.

I am, Sir, yours faithfully,

Rickmansworth.

F. S. D. Hogg, L.R.C.P., &c.

We have received personally the letter puffing the Leon Syndicate, and we have also had copies sent to us by other medical men, but we will deal first with the question of the Turvey treatment for inebriety. In July, 1905, we received a letter from a correspondent informing us that the Eden Hall Sanatorium, Woodford, was being run in the interests of the proprietors of a quack treatment for inebriety. We made certain inquiries and as a result refused to insert the advertisements of the sanatorium until we had learned particulars of the therapeutic methods adopted. Whereupon there came a letter from the Eden Hall Sanatorium signed R. M. Pooley refusing the particulars but saying that we were "labouring under some delusion." An appointment was made for an interview and a gentleman giving the name of R. M. Pooley appeared at this office prepared, it seemed, to deny, as resident medical officer of the Eden Hall Sanatorium, any connexion with the Turvey treatment. To this gentleman there was shown a prospectus of the Eden Hall Sanatorium and a prospectus of the Turvey British and Foreign Institutes, Limited (a company formed for the purposes of acquiring proprietary rights in the Turvey treatment for inebriety), with the name upon each prospectus of a Dr. Pooley. It was pointed out to him that Mr. Stuart Robertson, the managing director of Eden Hall, was a director of the Turvey British and Foreign Institutes; that the Rev. James Stephen Barrass, rector of St. Lawrence Old (sic) Jewry, had the doubtful honour in each case of being called chaplain; that the assistant medical superintendent was in each case a Dr. Wright; that the London offices and consulting-rooms of Eden Hall were the offices of the Turvey British and Foreign Institutes, Amberley House, Norfolk-street, Strand; that one of the telegraphic addresses given for Eden Hall was "Turvert, London"; and lastly, that on the prospectus of the Turvey British and Foreign Institutes the name of Dr. Pooley was given as medical superintendent of the Institutes and as residing at Eden Hall, Woodford. In these circumstances our visitor was probably not surprised when we told him that we considered the connexion of Mr. R. M. Pooley, he being the Dr. Pooley of Eden Hall, with the Turvey treatment of inebriety to be established.

It has recently come to our attention that Mr. Pooley is suggesting that an old-time and unfortunate flirtation with the Turvey treatment has now been abandoned. Mr. Hogg sends us a letter dated Jan. 8th in which Mr. Guy Elliston, the Secretary of the British Medical Association, says that Mr. Pooley had assured the Ethical Committee of the Association that he was no longer connected with the Turvey treatment. Anxious to do justice to Mr. Pooley we caused inquiries to be made into the matter. On Tuesday, Jan. 23rd, we obtained from Amberley House a prospectus of the Turvey treatment, when we found that the sanatorium in connexion with that treatment was no longer advertised by name and that the medical superintendent also remained anonymous. Clearly Dr. Pooley of Eden Hall no longer desired to publish his association with the Turvey treatment. But a letter to Amberley House written two days later asking if the Turvey treatment could be pursued at a sanatorium brought to the writer a prospectus of Eden Hall Sanatorium, "resident medical superintendent, R. M. Pooley, M.R.C.P., &c.," and a letter signed J. Stuart Robertson, secretary of the Turvey Treatment Company, saying, "I enclose you prospectus of Eden Hall where the patient could undergo the Turvey treatment under the care of a medical man." Any doubt as to the identity of the medical man referred to was solved by a letter from Mr. Robertson four days later, saying, "I have seen Dr. Pooley with reference to the reception of your patient and he could arrange to receive him at once." In face of such letters as these there can be no doubt that Mr. Pooley is, and has all along been, connected with the Turvey treatment of inebriety, and we consider the connexion a highly discreditable one.

We have been requested by several correspondents, as well as Mr. Hogg, to state our opinion upon the professional

propriety lately exhibited by Mr. Pooley in issuing a circular invitation in behalf of the Leon Syndicate, Limited. The fault here is verily compared to the gross error of participating in the profits of a quack cure for inebriety, but it is grave enough. The concern in question is an exploration syndicate whose (to quote Mr. Pooley) "work will consist in forming companies and other business undertakings which the wide distribution of its one-shilling shares (a useful innovation), and the large working capital, place it in a strong position to do." We procured a prospectus of this company and find that the directors are stated to be Charles Gordon-Lennox Beale, 2, Norfolk-street, Strand, W.C.; Frank Chetwood Doyle, 3, Venn-lamb-buildings, W.C.; and Richard Charles Mason Pooley, M.R.C.P., &c., V.D., Monkham, Woodford Green. We strongly recommend our readers to have nothing to do with the venture which, by the way, has already been unkindly criticised in at least one financial paper. Mr. Pooley claimed a sort of disinterested professional feeling in advocating the claims of the Leon Syndicate. "It is not often," he says in his circular letter, "that a medico can help his professional brethren to make money." It is not often, we think, that a medico has written such a circular letter in support of such a scheme, and those whom he terms his brethren may think as we do, that the letter and prospectus might be laid before the General Medical Council for decision as to whether Mr. Pooley's conduct is ethically correct—as to whether, in fact, Mr. Pooley ought to continue to have the right to address members of an honourable profession as his brethren. But apart from all professional questions, Mr. Pooley seems to us too elusive in his address and style to be a satisfactory guarantor of a financial scheme. The Richard Charles Mason Pooley, M.R.C.P., &c., V.D., of Monkham, Woodford Green is undoubtedly the Mr. Pooley of Eden Hall, for in a letter written to one of our correspondents who had inquired about the Turvey treatment Mr. Pooley replied on paper headed "Monkham, Woodford Green," which he said was the old name of Eden Hall used by him in his private correspondence. The possession of two addresses, which are really one and the same address, does not commend itself to us, the opportunity thus given for mystification being obvious, and therefore particularly unfortunate in a man who is circularising the medical profession with invitations to part with money upon the strength of his personal assurance. But granting that there are reasons why an inebriate home might well be conducted under a private address as well as a professional address, Mr. Pooley's other varieties of style and location display a tendency to be confusing and confused. We learn from the prospectus of the Leon Syndicate that his name is Richard Charles Mason Pooley and that he lives at Monkham, Woodford Green. We learn from the current Medical Directory, where, however, the name has an asterisk, and from the Medical Register, that the address of Richard Charles Mason Pooley is 35, Highbury-grove, N., while there is no Richard Charles Mason Pooley among the provincial names. Whatever the intention the significance of this seems to be that if anyone consults the Medical Directory to find out the name of the medical officer of the Turvey Sanatorium at Woodford the name will not be found. Mr. Pooley uses only two initials in signing his letters and on the various Turvey documents is styled "Dr." Pooley. In the Medical Register he is described as M.R.C.P.I.; in one of his advertisements which we have received he figures as M.R.C.P.E. and V.D. The assumption of the medical degree is made by others besides Mr. Pooley—we hasten to admit this—but it is none the less an assumption and warrants us in asking the date on which he received his military decoration. We do not say that he does not possess it, but we cannot find his name in the more recent lists of officers possessing the decoration. When we recall that Dr. R. M. Pooley, or Mr. R. C. M. Pooley, of Eden Hall, Woodford, or Monkham, Woodford Green, and also of 35, Highbury-grove, N., can moreover be addressed at Amberley House, the office of the Turvey Treatment Company, we do not yet exhaust the number of roofs that shelter him. He is to be seen "generally here between 3 and 4 o'clock," "here" being the office of the Leon Syndicate, and the invitation is extended to members of the medical profession desirous of participating in the benefits of that scheme.

We commend Mr. Pooley to the attention of the General Medical Council, at whose disposal are the documents from which this statement is written.

THE MORISON LECTURES.

THE second of these lectures was delivered in the hall of the Royal College of Physicians, Edinburgh, on Jan. 26th. Dr. W. FORD ROBERTSON said that he wished to deal chiefly with the results of an experimental inquiry that Dr. G. Douglas MacRae and he had made into the action of the living blood and blood serum upon pure cultures of diphtheroid bacilli isolated from cases of general paralysis. The bacillus with which they had worked was one which in respect of its morphological characters, staining reactions, and power to form acid in glucose broth, closely resembled the Klebs-Löffler bacillus. It had been laid down by high authorities that an organism differing from the diphtheria bacillus solely in want of virulence must be regarded as merely a diphtheria bacillus in an attenuated condition and should be spoken of as such. In previous papers the organism had therefore been provisionally regarded as an attenuated form of the Klebs-Löffler bacillus. Whether it was really of this nature or not was an open question. Their more recent observations strongly inclined them to the view that it was a special organism. Having referred to the remarkable polymorphism of this bacillus, the lecturer considered specially its thread form. The organism had been observed to invade the tissues in this form in several general paralytics; it had also been observed invading in four rats fed or injected with cultures of the bacillus. The bacillus when first isolated often showed a strong tendency to form threads. They had endeavoured to ascertain how the organism could be made to assume this special character and they had succeeded in obtaining a filamentous growth by cultivating it for several days at 41°C. upon blood films. It was therefore probable that invasion by the thread form occurred in cases in which there had been a sustained high temperature for several days before death. One of the points which they had specially studied was the phagocytic action of the leucocytes upon the bacillus. They had used a technique of their own. Two actions required to be studied—namely, the power of the leucocytes (in the natural serum) to take up the bacilli and the power of the leucocytes to dissolve the bacilli when engulfed. No constant alteration could be detected in the power of taking up in the general paralytic's blood. On the other hand, the power of dissolving the bacilli when taken up had in most cases been distinctly greater on the part of the leucocytes of the general paralytic than on that of the leucocytes of the controls. Within the first three hours of incubation at least the lysogenic action was entirely intracorporeal. Having studied the appearance presented by the dissolving organisms in the experimental films, they endeavoured to ascertain if bodies having a similar appearance could be found in the fluid and tissues of the general paralytic. Every case studied with this object had given the same affirmative answer. Diphtheroid bacilli, more or less altered by lysogenic action, were present in great numbers in the catarrhal pneumonic foci that occurred in most general paralytics dying in congestive attacks. They could also be detected in the adventitial spaces of the inflamed cerebral vessels and in the meshes of the pia arachnoid. Further, they could be observed in the films made from the blood of the living paralytic, especially if the patient was suffering from a congestive attack. They could also be detected in the centrifuge deposit from the cerebro-spinal fluid obtained by lumbar puncture. Lastly, they were often present in large numbers in the centrifuge deposit from the urine, especially during a congestive attack. This experimental study had suggested to them that failure to obtain cultures from the blood and cerebro spinal fluid depended upon the fact that most of the bacilli were dead and that the few living ones that were occasionally present were killed in consequence of the continued action of the phagocytic cells. They had therefore tried various measures with a view to prevent the continuation of this bactericidal action, the simplest of which was to allow the tubes to stand in the cold for 24 hours before incubating them. By adopting this plan, or slight modifications of it, they had succeeded in getting pure growths from the blood in four cases (three of the

1 An abstract of the first lecture was published in THE LANCET of Feb. 3rd, 1906, p. 324.

patients being in congestive attacks) and from the cerebro-spinal fluid in two. The growths were at first generally extremely feeble but the organism could be incriminated by being subcultured upon blood films. A search had been made for a specific action of the blood of the general paralytic upon these bacilli. The most distinctive reaction they had obtained was that which concerned the power of the leucocytes to dissolve the bacilli. They had estimated the percentage of altered bacilli in the leucocytes after three hours' incubation. This gave what they called the intra-corporal bacteriolytic index. So far as their observations went it was as a rule higher in the general paralytic's blood than in control bloods. It seemed, however, probable that more direct methods of bacteriological diagnosis would become available.

The third lecture was given on Jan. 29th. Dr. Robertson said that in discussing the problem of the etiology and pathogenesis of general paralysis and tabes dorsalis in the light of the investigations detailed in the two preceding lectures, he wished so far as possible to avoid a controversial attitude. His purpose was simply to endeavour to show that a few and solid edifice could be constructed out of the facts elicited by his colleagues and himself. A passing critical reference to the syphilitic hypothesis was, however, inevitable. He contended that the part played by syphilis was only that of weakening the general and local defences. There were many strong reasons for believing that these diseases could not be essentially syphilitic in their causation and, moreover, there was the clearest evidence that the general paralytic suffered from an active bacterial toxæmia. Having summarised the evidence in support of the view that general paralysis and tabes dorsalis are dependent upon infection by a diphtheroid bacillus, he described what appeared to him to be the essential pathogenesis of these two diseases. In general paralysis the specific bacillus appeared to be conveyed from individual to individual by contagion. There was ample warrant for the conclusion that it could neither multiply to any extent upon a healthy mucosa nor invade the tissues. A preliminary weakening of the local and general defences was evidently necessary. There were numerous chemical forces that could produce this condition of impaired local and general defence, but there were three that seemed of special importance in relation to general paralysis and tabes dorsalis. They were the pathogenic agent of syphilis, alcohol, and uterine toxæmia used in excess. There was evidence that a mere saprophytic infection might continue for a long time without leading to any important toxic effects. It was probably only when the state of the local and general defensive forces was such as to permit of the bacillus invading the tissues that the paralytic toxæmia became of any great intensity. Of the occurrence of such invasion there was ample evidence. The more recent observations of Dr. McRae and himself had led them to attach special importance to the bacilli as a seat of chronic infection, although there were many cases in which bacillary invasion could be shown to have taken place from the alimentary tract. It was virtually a life-and-death struggle between the bacilli and the polymorphonuclear leucocytes. It was a conflict in which the leucocytes after a long succession of victories were ultimately defeated, for their power of renewal was limited, whilst that of the bacilli was virtually unlimited. Under certain conditions the defensive forces were placed at a disadvantage. One of these conditions had been ascertained experimentally. It had been found that lowering of the temperature 4° or 5° C. below the normal greatly diminished the power of the leucocytes to take up these bacilli. It was therefore reasonable to believe that lowering of the body temperature was an important cause of aggravation of the bacillary attack. Local invasion manifested itself clinically in a congestive attack. Large numbers of the bacilli reached the circulation either by way of the lymphatics or through the capillary walls. They could be seen in the blood stream in the neighbourhood of the infective foci and also in films made from the patient's blood during life. Most of the bacilli that reached the blood were quickly taken by leucocytes and digested, but many escaped from the circulation in one or other of two ways—namely, through the capillaries of the kidney into the urine and through the walls of the cerebral vessels into the adventitial lymph channels. The further disintegration of the bacilli that took place in the lymph channels gave rise to a local toxic action. There were thus a general toxæmia due to the

disintegration of the bacilli at the seat of invasion and in the blood and an added local cerebral toxic action dependent upon the disintegration of the bacilli that had passed through the endothelium of the cerebral vessels. In some instances a successful repulsion of the invasion was followed by a prolonged period in which the bacillus was kept at bay. Clinically, this corresponded to a remission. More commonly there were a continuous comparatively slight absorption of toxins from the infective focus and a succession of more or less severe invasions, which time after time were repelled. In the end, however, the defensive forces were overcome. There was then a fatal congestive attack. Coming next to the subject of the pathogenesis of tabes dorsalis, Dr. Robertson referred to the recent observations of Orr and Rows upon the production of tabetic lesions of the cord by the absorption of toxins from peripheral septic foci. The toxins passed up the perineural sheaths without injuring the nerve fibres and affected the fibres of the posterior root as they entered the cord at the spot where they lost their neurilemma sheath. In order to account for the similar lesions that occurred in tabes it was necessary to find some peripheral toxic focus. So far as their evidence went, it pointed to this focus being in the bladder. In ten consecutive cases of tabes they had found that there were abundant living diphtheroid bacilli in the urine and therefore the patients were suffering from a diphtheroid cystitis. In these cases the bacilli were present in too great numbers to have come merely from the urethra which in other cases very frequently contained some diphtheroid bacilli. If further observations confirmed this testimony of these ten cases, then they would be bound to conclude that in tabes dorsalis there was in the urinary tract an infective focus comparable to that which occurred in the respiratory or alimentary tract in general paralysis. The bacilli were invading and therefore produced toxic effects far greater than those that resulted from the simple passage of disintegrating bacilli through the urinary tract. After referring briefly to some objections that might be raised to the views advanced, he considered the question of treatment. There was evidence that the general paralytic defended himself, and often with prolonged success, by manufacturing specific bacteriolytic antibodies. It seemed, therefore, worth while to produce such antibodies in suitable lower animals and to use them as therapeutic agents. They were, at least, going to give this method of treatment a trial. In conclusion, he said he desired to acknowledge his indebtedness to the General Board of the Laboratory of the Scottish Asylums, and to the representatives of the Edinburgh, Glasgow, Dumfries, Aberdeen, and other asylums for the facilities which they had offered his colleagues and himself for carrying out their researches. The lectures will be published in full in the *Review of Neurology and Psychiatry*.

PREPARATIONS FOR THE FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE work of organisation for the Fifteenth International Congress of Medicine, which is to meet at Lisbon next April, progresses apace. A sort of newspaper called the *Bulletin Officiel* has been issued from time to time, giving details as to the papers to be read, the classification of the subjects, and even some portraits and biographical sketches of eminent promoters of the Congress who have died before the realisation of their hopes in regard to this great scientific assembly. The secretary of the section of ophthalmology, Professor Hygino de Sousa, succumbed to the effects of miliary tuberculosis from which he had long suffered. Then Professor Serrato of the Lisbon Medical School, who was to have presided over the section of anatomy, is also dead. His two big volumes, entitled "A Treatise of Osteology," are well known among Portuguese medical students. There are, finally, in the *Bulletin Officiel* a portrait and obituary notice of Dr. Carlos Bellm who had been appointed president of the Hygiene section, which will treat of military medicine. Dr. Carlos Bellm had studied extensively the details of sanitary science, especially in relation to the maintenance of the health of armies. In spite, however, of these most regrettable losses the members of the Congress have succeeded

in making one or two important innovations. Apart from the *Bulletin* already mentioned they have not only settled in which rooms the sections of the Congress are to meet but they have published a plan of each floor of the School of Medicine where the Congress is to assemble. Every compartment, room, amphitheatre, or hall is numbered and a reference shows at once the employment for which it is destined. Thus those who want to inquire about travelling and excursions must go to room No. 13 on the ground floor. Others who are anxious about obtaining lodging accommodation must go to Room 27 on the same floor. Anyone who desires to leave his coat or bag must find out Room 38 and those who have not paid their entrance fee will find the cashier in Room 40. Altogether there are 43 different rooms and halls on this one floor. On the first floor, which is as large, there are only 30 rooms, but these are much more spacious. These will be occupied by sections likely to attract many members of the Congress. Then there is an annex with 21 rooms or divisions and one of these is a kitchen and another comprises a terrace and restaurant. Thus it will be possible to have meals without leaving the premises where the Congress will meet. Even the conferences or special lectures that do not form part of the work of the sections are to be given here. It will be remembered that at Madrid and in other towns such meetings were convoked in different parts of the cities and much trouble and time were expended in going about to find the particular hospital or building where a lecture had been announced. At Lisbon, on the contrary, all is concentrated in the one building. Consequently the position of this one building becomes a matter of primary importance.

Few persons are likely to undertake such a voyage without providing themselves with a Baedeker, and therefore it has been the subject of special correspondence on our part to ascertain where in Baedeker's map the *locale* of the Congress is situated. The answer is that Congress will meet in the square formed by the letter G and the number 2 in the map of Lisbon that will be found in Baedeker's Guide to Spain and Portugal. But the organisers of the Congress are preparing a medical guide to Lisbon and this will contain a new map drawn and printed expressly for the Congress. In this new map the Congress *locale* is in the square marked by the lines G, No. 6. It will be seen that the Escola Medica, where the Congress is to meet, overlooks the field of martyred patriots, Campo dos Martyres da Patria. Within a few hundred yards there is a circle of hospitals. Thus close to, and due south of, the Escola Medica are the Bacteriological Institute and the Hospital de S. José. South-west, and equally near, there is the Hospital de S. Lazaro. Due west at a distance of 200 yards is the Hospital do Desterro. To the north-west and a little farther off there is the Asylo de Sto. Antonio. The Hospital D. Amélia is in the same direction but much further away. Due north but not quite so near as the hospitals to the south, are the Hospital de D. Estephania, the veterinary institution, and the lunatic asylum, and to the north-east the hospital of St. Matba. Close at hand to the due east are the Asylum for the Poor and the Ophthalmological Institute. Finally, to the south-east are the botanical gardens, the polytechnical schools, and the headquarters of the Medical Association of Portugal, and farther away is the Academy of Science. Thus we find here a double centralisation. First, everything that forms part of the Congress will take place in the one building, and secondly, that one building is itself situated in the very centre of all the hospitals and other institutions which members of the Congress are likely to visit. Topographically speaking, therefore, everything seems to have been arranged very conveniently. As time is always most precious during such congresses these advantages are sure to be appreciated highly.

Further, and this will not only economise time but will very materially help to render the discussions of the Congress more interesting and useful, a large number of the reports by which the debates are to be opened have been written and are already printed. The reporters themselves are unfortunately prone to postpone writing their reports to the last moment, so perhaps it will not be possible to publish them all before the Congress meets. Nevertheless, a very large number of these reports will be in the hands of those who are interested in their subject matter before the Congress meets. Thus it will be possible to prepare replies to the reporters and to look up evidence or data for the purpose. Considering that all this work of organisation was commenced in 1904, and has been continued ever since, everything

should be ready in good time. There is every reason therefore to hope that the Congress will prove a success and that the organisers will earn the gratitude of the medical profession throughout the world.

Looking Back.

FROM

THE LANCET, SATURDAY, Feb. 9th, 1828.

*Sitting of Surgery.**

BLINDNESS FROM WORMS IN THE EYES.

M. J. Cloquet communicated to the Sitting, a curious case of a man attacked with several subcutaneous abscesses on the head, in consequence of a considerable deposit of the eggs of flies on this part. An old man fell asleep in the open air; the flies, attracted by the bad odour which exhaled from his body, deposited their eggs in great numbers between the eyelids, in the auditory passages, on the cheeks, the head, and beneath the prepuce. After a few days the eggs produced larvæ, which, at first, occasioned a very troublesome itching, then several abscesses formed beneath the integuments of the head, and the temples, and in the orbit. When the man was admitted into the hospital, there was an ichorous discharge from all these parts, from the auditory passages, and the prepuce, containing a number of small worms, which were found to be the larvæ of the *musca carnaria*. M. J. Cloquet removed a great quantity of these worms, and employed mercurial frictions to destroy the remainder. At present, the patient is in a fair way of recovery; but, from the worms having perforated the eyes, he is quite blind. Notwithstanding the extent of mischief produced by these animals, no hæmorrhage occurred. M. Larrey stated, that he had often seen, during the campaign in Egypt, worms in wounds; but they never attacked dense tissues as those of arteries, which might account for no bleeding having occurred in the case related by M. Cloquet.

MEDICINE AND THE LAW.

Is a "Doctor's Boy" a Male Servant?

A SUMMONS was heard recently at the South-Western police court against a medical man practising in Battersea for keeping a male servant without a licence. Evidence was given on behalf of the Inland Revenue authorities that the boy in question, who presumably may be regarded as typical of a good many doing like work, opened the surgery door to patients, ran his master's errands, including the delivery of medicine, and performed such domestic duties as cleaning windows and boots. The defendant's advocate contended that the position of the boy corresponded to that of a lad employed by such a trader as an oilman, whose main occupation would be to deliver the goods sold by his employer but who might incidentally be a member of his household and perform other duties therein. It certainly would surprise an oilman who employed his errand boy to would surprise an oilman who employed his errand boy to black his boots and clean his windows to learn that he was keeping a male servant and must pay in respect of him the licence fees demanded from his wealthier customers for their butlers and footmen. Mr. de Grey, however, took the view that the youth in question was a page and refused to accept the view that he was a "doctor's boy" kept to run errands. He held as a fact that the employment was mainly domestic and that the delivery of medicine was merely incidental to it and he ordered 15s. for the licence and 2s. costs to be paid by the defendant. We are not aware of the exact extent to which the boy in this case was engaged in the dwelling-house and in duties inseparably connected with that portion of his employer's premises. It is probable, however, that but for the delivery of medicine the defendant would have had no reason for keeping a boy at all, and that his duties, so far as they were connected with the profession of his master, did not make him any more a domestic servant than would those performed by a solicitor's office-boy. The polishing of the brass plate, for example, on his

* Archives Generales, Dec 1827.

master's door, together with all work done in or about the surgery, would be an office boy's work and not domestic service, equally with the delivery of medicines, the necessity for which caused him to be employed at all. If he was useful to the medical man in his private capacity it seems likely that this was incidental rather than essential, unless his functions differed from those of the majority of lads employed in capacities apparently similar.

The Defence of Insanity.

At the recent Aylesbury assizes where a murder charge was being tried Mr. Justice Jelf stated that at a meeting of the judges held lately they had objected to the growing practice of the Treasury as prosecutors offering in these cases evidence to rebut the plea of insanity. In this case counsel for the Treasury had taken expert medical opinion and were prepared to call witnesses in support of the sanity of the prisoner. The learned judge affirmed that the onus of proving insanity is upon the defence and the evidence available should be at their disposal.

The Status of the Unborn Child.

This matter has again arisen in an Appeal Court of the United States of America in the case *State (ex rel. Niece) v. Soale*. The statutory word "person" has by this decision been given a latitude not previously recognised. It was held in this case that an act giving a right of action to any person damaged in his means of support in consequence of the unlawful sale of liquor applies to a child born after the death of his father resulting from such a sale. This decision in no way compromises the view that an unborn child is denied a right of recovery for physical injuries caused before his birth; such a child will not be considered as a "person" under statutes similar to Lord Campbell's Fatal Accidents Act which allows suits by representatives of deceased persons. In both these cases the unborn child is regarded as part of his mother's body. It has been argued, however, that logical consistency may be maintained by predicating a right to *mens sana in corpore sano* at birth, a breach of which, though previously occasioned, does not arise until after birth. The right of support is regarded as a property right and the analogy of cases, allowing unborn children equal proprietary rights with other children, is recognised in applying statutes which permit children to recover for loss of support through death of their parent. The status of unborn and posthumous children has quite recently been considered in THE LANCET.¹

The Sale of Spirits in Russia for Medicinal Purposes.

According to the *Torgovo Promyshlennaya Gazeta*, the Minister of Finance has given permission for the sale of wines and spirits from the Government spirit shops to medical men for curative or medicinal purposes outside the regulation hour limits.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8557 births and 4703 deaths were registered during the week ending Feb. 3rd. The annual rate of mortality in these towns, which had been 16·7, 15·8, and 15·9 per 1000 in the three preceding weeks, declined again last week to 15·5 per 1000. In London the death-rate was 14·8 per 1000, while it averaged 15·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7·9 in Hanley, 8·0 in Willeiden, 8·2 in Handsworth (Staffs), 9·2 in East Ham, 9·5 in Northampton, 10·2 in Coventry, 10·5 in Wallasey and 10·7 in Walthamstow and in West Hartlepool, while the highest rates were 20·7 in Oldham, 20·8 in Plymouth, 20·9 in Stockport, 21·2 in Rhondda, 21·8 in Preston, 22·1 in West Bromwich, 23·2 in Newport (Mon.), 23·3 in Grimsby, and 25·7 in Merthyr Tydfil. The 4703 deaths in these towns last week included 366 which were referred to the principal infectious diseases, against 369, 369, and 385 in the three preceding weeks; of these 366 deaths, 110 resulted from whooping-cough, 85 from diphtheria, 81 from measles, 42 from diarrhoea, 35 from scarlet fever, 12 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases was registered last week in Great Yarmouth, Walsall, Handsworth (Staffs), West

Bromwich, Grimsby, Stockport, Birkenhead, Wallasey, Wigan, or Middlesbrough; among the other towns the highest death-rates from the principal infectious diseases were recorded in Birmingham, Derby, Bootle, Bury, Blackburn, Preston, Halifax, Stockton-on-Tees, and South Shields. The greatest proportional mortality from measles occurred in Bury, Blackburn, and Preston; from scarlet fever in Hanley and Blackburn; from diphtheria in Ipswich, Aston Manor, Derby, Halifax, and Hull; and from whooping-cough in Bootle, Burnley, and Stockton-on-Tees. The mortality from "fever" and that from diarrhoea showed no marked excess in any of the large towns. One death from small-pox was registered in South Shields, but not one in any other of the 76 towns, and no cases of this disease were under treatment last week in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Feb. 3rd, was 2912, against 3062, 3066, and 2983 on the three preceding Saturdays; 319 new cases were admitted during the week, against 257, 328, and 322 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 370, 299, and 293 in the three preceding weeks, rose again to 313 last week, but were 65 below the average number in the corresponding periods of the four preceding years. The causes of 60, or 1·3 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Bradford, Leeds, Hull, and 46 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Walsall, West Bromwich, Birmingham, Coventry, Leicester, Nottingham, Liverpool, Bootle, Rotherham, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·8, 18·2, and 19·6 per 1000 in the three preceding weeks, declined again to 16·5 per 1000 during the week ending Feb. 3rd, but was 1·0 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·7 in Aberdeen and 15·9 in Glasgow, to 19·0 in Dundee and 19·2 in Greenock. The 564 deaths in these towns included 18 which were referred to measles, 18 to diarrhoea, six to whooping-cough, four to diphtheria, and one to "fever," but not any to small-pox or scarlet fever. In all, 47 deaths resulted from these principal infectious diseases last week, against 61, 53, and 69 in the three preceding weeks. These 47 deaths were equal to an annual rate of 1·4 per 1000, which was 0·2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 23, 24, and 31 in the three preceding weeks, declined again last week to 18, of which 12 occurred in Glasgow, three in Dundee, and two in Greenock. The deaths from diarrhoea, which had been 16, 19, and 13 in the three preceding weeks, rose again to 18 last week, and included ten in Glasgow, four in Edinburgh, and two in Perth. The fatal cases of whooping-cough, which had been five, two, and seven in the three preceding weeks, declined again last week to six, of which four occurred in Glasgow. The deaths from diphtheria, which had been eight, five, and 12 in the three preceding weeks, declined again to four last week, and included two in Greenock. The deaths referred to diseases of the respiratory organs in these towns, which had been 128, 114, and 110 in the three preceding weeks, rose again last week to 113, but were 33 below the number in the corresponding period of last year. The causes of 17, or 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·7, 20·1, and 21·2 per 1000 in the three preceding weeks, further rose to 24·4 per 1000 during the week ending Feb. 3rd. During the past four weeks the death-rate has averaged 21·9 per 1000, the rates during the same period being 15·8 in London and 18·2 in Edinburgh. The 177 deaths of persons belonging to Dublin registered during the week under notice were 17 in excess of the number in the preceding week and included five which were referred

¹ THE LANCET, March 24th, 1905 (p. 613), and April 1st (p. 877).

to the principal infectious diseases, against seven, three, and five in the three preceding weeks; of these, two resulted from whooping-cough, and one each from diphtheria, "fever," and diarrhoea, but not any from small-pox, measles, or scarlet fever. These five deaths were equal to an annual rate of 0.7 per 1000, the death-rates last week from the principal infectious diseases being 1.1 in London and 0.8 in Edinburgh. The fatal cases of diphtheria, which had been three, one, and one in the three preceding weeks, rose again last week to two. The 177 deaths in Dublin last week included 32 of children under one year of age and 63 of persons aged 60 years and upwards; the deaths both of children and of elderly persons were in excess of the respective numbers recorded in the preceding week. Four inquest cases and four deaths from violence were recorded; and 79, or more than two fifths, of the deaths occurred in public institutions. The causes of eleven, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. E. Coad to the *Black Prince*; J. H. Stenhouse to the *Aboukir*; and W. A. Whitelegge to the *Cornwallis*. Staff-Surgeon M. J. O'Regan to the *Trafalgar*. Surgeons: P. D. Ramsay to the *Cornwallis*; E. B. Kenny to the *Redbreast*; and L. F. Cope to the *Attentive*, on commissioning.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Jan. 29th, 1906):—Michael Boyle, Percy Evans, Claude K. Morgan, John M. Baist, and George St. C. Thom.

Captain W. W. Scarlett assumes medical charge of troops, Piershill. The following officers proceed to India: Lieutenant-Colonel O. W. Thiele for Secunderabad Division; Lieutenant-Colonel T. B. Winter for the Eastern Command; Lieutenant R. E. Humfrey and Lieutenant G. G. Tabuteau for the Western Command. Captain A. H. Safford has joined at Woolwich. Major C. H. Melville (who has been appointed a member of the Army Medical Service Advisory Board) and Major T. H. F. Clarkson have joined the London District for duty.

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London, for which 74 candidates entered 16 of the successful candidates possess university qualifications.

	Marks.		Marks.
Charles Milligan Drew	595	Victor Cyril Honeybourne	507
Archibald Alfred Sutcliffe	585	James Clarence Ledcatt	504
Arthur Gordon Cummins	584	Hingston	501
Alfred Sutton Millard	577	George Bennicke Edwards	501
Hugh Evelyn Gotelee	573	Frederick Duke Gwynne	501
Archibald Smith Littlejohns	568	Howell	501
Frank Alexander McCammon	558	Charles Reade Munroe	499
William Rickards Galwey	548	Morris	499
Robert George Archibald	543	Patrick Sampson	498
George De la Cour	541	William Harold Gillatt	498
William Egan	536	John Walter Lennox Scott	498
Frank Forrest	535	William Clayton Smiles	498
Timothy William Octavius Sexton	535	John Browne Grogan	496
Robert George Hetherington Tate	534	Mulligan	494
Augustus Scott Williams	532	Arthur Herbert Bond	494
Alexander Dawson	515	Marcus Graham Dill	494
Clive Thornley Edmunds	514	Richard Ernest Upton Newman	492
Valentine George Johnson	513	Harold Jacques	489
Ernest William Mynall	513	Donald de Courcy O Grady	484
Palme	513	Thomas Trevor Hull Robinson	484
Edward John Porteous	511	Thomas Christie Cyprus	483
Edward Michael O'Neill	509	Leslie	480
		Lawrence George Gibson	475
		Philip Smyly Stewart	475

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 3rd Middlesex: Surgeon-Major J. I. Palmer resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Jan. 15th, 1906).

Rifle: 6th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Lieutenant C. B. Gunn to be Surgeon-Captain (dated Feb. 7th, 1906). 2nd Volunteer Battalion

the Royal Sussex Regiment: Supernumerary Surgeon-Captain (Honorary Captain in the Army), G. "Black" absorbed into the Establishment (dated Jan. 17th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

On Saturday, Feb. 17th, at 8 P.M., at the headquarters of the corps, Calthorpe-street, London, W.C., Colonel A. T. Sloggett, O.M.G., R.A.M.C., P.M.O. of the London district, will deliver the prizes won by the members of the London companies of the Royal Army Medical Corps (Volunteers). After the distribution of prizes a dance will be held.

THE CIVIL AND MILITARY BRANCHES OF THE MEDICAL PROFESSION IN PEACE AND WAR.

Surgeon-General A. H. Keogh, C.B., Director-General of the Army Medical Service, delivered the inaugural address of a course of lectures on Army Medical Administration and Duties at the West London Hospital on Jan. 20th. The Director-General pointed out that it was interesting to study the relation between arms and medicine, for it was certain that medical men could largely influence the successful issue of campaigns. In order to attain this end not alone is a competent knowledge of medicine in its widest sense necessary, but also some knowledge of the art of war, in order to be able to coördinate with the military requirements of the moment. The care of the sick and wounded is therefore but one portion of army medical duties; the means for the early removal of the sick and wounded from the front must be studied, also the measures to be adopted for the suppression of diseases, and, most important of all, the prevention of disease. The lecturer then proceeded to give a short account of the origin and history of the Army Medical Service and went on to describe what had been done since the close of the South African war to improve the education of the officers by the establishment of the Royal Army Medical Corps College in London and by the formation at central hospitals of hygienic and clinical laboratories; and he acknowledged that the opportunities afforded by these institutions had been accepted by the officers with remarkable enthusiasm and zeal, while the civilian medical men called to aid in the instruction of officers had given cordial co-operation. He then proceeded to describe the lines which this course of lectures should, in his opinion, follow in order to draw more closely together the civilian and military branches of the medical profession, as by this intimate union alone can military medical efficiency in war be attained.

THE ADMIRALTY AND MEDICAL OFFICERS OF HEALTH.

At the meeting of the St. Anstell (Cornwall) rural district council held on Feb. 2nd reference was made to the medical officer of health having been refused admission to a coast-guard station from which a case of enteric fever had been notified. It was stated that the Admiralty, in reply to a communication from the council, had expressed its willingness to give full consideration to any representation made by a local authority, but it could not divest itself of its duty as a department of State to look after its own establishments, which did not fall within the jurisdiction of local authorities.

Correspondence.

"Audi alteram partem."

THE PRESENT MEDICAL CURRICULUM.

To the Editors of THE LANCET.

SIRS,—The report recently made to the Royal College of Physicians of London by a committee appointed to consider a communication from the Royal College of Surgeons of England on the subject of the medical curriculum is now public property and, taken along with the admitted falling off in the entry of medical students, calls attention to a state of affairs which seems to demand speedy remedy. The present system of medical education appears to be a compromise between the competing claims of various sciences. The medical student passes through many hands and the teacher of each branch tends to claim the greatest possible amount of time for his particular specialty. As a result we run the risk of losing sight of

to the principal infectious diseases, against seven, three, and five in the three preceding weeks; of these, two resulted from whooping-cough, and one each from diphtheria, "fever," and diarrhoea, but not any from small-pox, measles, or scarlet fever. These five deaths were equal to an annual rate of 0.7 per 1000, the death-rates last week from the principal infectious diseases being 1.1 in London and 0.8 in Edinburgh. The fatal cases of diphtheria, which had been three, one, and one in the three preceding weeks, rose again last week to two. The 177 deaths in Dublin last week included 32 of children under one year of age and 63 of persons aged 60 years and upwards; the deaths both of children and of elderly persons were in excess of the respective numbers recorded in the preceding week. Four inquest cases and four deaths from violence were recorded; and 79, or more than two fifths, of the deaths occurred in public institutions. The causes of eleven, or more than 6 per cent., of the deaths registered in Dublin last week were not certified.

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THE following appointments are notified:—Fleet Surgeons: J. E. Coad to the *Black Prince*; J. H. Stenhouse to the *Aboukir*; and W. A. Whitelegge to the *Cornwallis*. Staff Surgeon M. J. O'Regan to the *Trafalgar*. Surgeons: P. D. Ramsay to the *Cornwallis*; E. B. Kenny to the *Kiddreav*; and L. F. Cope to the *Attendant*, on commissioning.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Jan. 29th, 1906):—Michael Boyle, Percy Evans, Claude K. Morgan, John M. Buist, and George St. O. Thom.

Captain W. W. Scarlett assumes medical charge of troops, Piershill. The following officers proceed to India: Lieutenant-Colonel C. W. Thiele for Secunderabad Division; Lieutenant-Colonel T. B. Winter for the Eastern Command; Lieutenant R. E. Humfrey and Lieutenant G. G. Tabuteau for the Western Command. Captain A. H. Safford has joined at Woolwich. Major C. H. Melville (who has been appointed a member of the Army Medical Service Advisory Board) and Major T. H. F. Clarkson have joined the London District for duty.

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London, for which 74 candidates entered 16 of the successful candidates possess university qualifications.

	Marks.		Marks.
Charles Milligan Drew	595	Victor Cyril Honeybourne	507
Archibald Alfred Sutcliffe	585	James Clarence Ledent	
Arthur Gordon Cummins	584	Hingston	504
Alfred Sutton Millard	577	George Bennicke Edwards	501
Hugh Evelyn Golelee	573	Frederick Duke Gwynne	
Archibald Smith Littlejohns	568	Howell	501
Frank Alexander McCammon	552	Charles Reader Munroe	
William Richards Galwey	548	Morris	499
Robert George Archibald	543	Patrick Sampson	499
George De la Cour	541	William Harold Gillatt	498
William Egan	536	John Walter Lennox Scott	498
Frank Forrest	535	William Clayton Smales	498
Timothy William Octavius Seaton	535	John Browne Grogan	
Robert George Hetherington Tate	534	Milligan	496
Augustus Scott Williams	532	Arthur Herbert Bond	494
Alexander Dawson	515	Marcus Graham Dill	494
Clive Thornley Edwards	514	Richard Ernest Upton	
Valentine George Johnson	513	Newman	492
Ernest William Mynall		Harold Jacques	489
Palme	513	Donald de Courcy O'Grady	484
Edward John Porteous	511	Thomas Trevor Hull Robin-	
Edward Michael O'Neill	509	son	484
		Thomas Christie Cyprus	
		Leslie	483
		Lawrence George Gibson	480
		Philip Smyly Stewart	475

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 3rd Middlesex: Surgeon-Major J. I. Palmer resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Jan. 15th, 1906).

Rifle: 6th Volunteer Battalion the Royal Scots (The Buffs) (Regiment): Surgeon-Lieutenant C. B. Gunn to be Captain (dated Feb. 7th, 1906). 2nd Volunteer

the Royal Sussex Regiment: Supernumerary Surgeon-Captain (Honorary Captain in the Army) G. "Black" is absorbed into the Establishment (dated Jan. 17th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

On Saturday, Feb. 17th, at 8 P.M., at the headquarters of the corps, Calthorpe-street, London, W.C., Colonel A. T. Sloggett, O.M.G., R.A.M.C., P.M.O. of the London district, will deliver the prizes won by the members of the London companies of the Royal Army Medical Corps (Volunteers). After the distribution of prizes a dance will be held.

THE CIVIL AND MILITARY BRANCHES OF THE MEDICAL PROFESSION IN PEACE AND WAR.

Surgeon-General A. H. Keogh, O.B., Director-General of the Army Medical Service, delivered the inaugural address of a course of lectures on Army Medical Administration and Duties at the West London Hospital on Jan. 20th. The Director-General pointed out that it was interesting to study the relation between arms and medicine, for it was certain that medical men could largely influence the successful issue of campaigns. In order to attain this end not alone is a competent knowledge of medicine in its widest sense necessary, but also some knowledge of the art of war, in order to be able to coördinate with the military requirements of the moment. The care of the sick and wounded is therefore but one portion of army medical duties; the means for the early removal of the sick and wounded from the front must be studied, also the measures to be adopted for the suppression of diseases, and, most important of all, the prevention of disease. The lecturer then proceeded to give a short account of the origin and history of the Army Medical Service and went on to describe what had been done since the close of the South African war to improve the education of the officers by the establishment of the Royal Army Medical Corps College in London and by the formation at central hospitals of hygienic and clinical laboratories; and he acknowledged that the opportunities afforded by these institutions had been accepted by the officers with remarkable enthusiasm and zeal, while the civilian medical men called to aid in the instruction of officers had given cordial co-operation. He then proceeded to describe the lines which this course of lectures should, in his opinion, follow in order to draw more closely together the civilian and military branches of the medical profession, as by this intimate union alone can military medical efficiency in war be attained.

THE ADMIRALTY AND MEDICAL OFFICERS OF HEALTH.

At the meeting of the St. Austell (Cornwall) rural district council held on Feb. 2nd reference was made to the medical officer of health having been refused admission to a coast-guard station from which a case of enteric fever had been notified. It was stated that the Admiralty, in reply to a communication from the council, had expressed its willingness to give full consideration to any representation made by a local authority, but it could not divest itself of its duty as a Department of State to look after its own establishments, which did not fall within the jurisdiction of local authorities.

Correspondence.

"Audi alteram partem."

THE PRESENT MEDICAL CURRICULUM.

To the Editors of THE LANCET.

SIRS,—The report recently made to the Royal College of Physicians of London by a committee appointed to consider a communication from the Royal College of Surgeons of England on the subject of the medical curriculum is now public property and, taken along with the admitted falling off in the entry of medical students, calls attention to a state of affairs which seems to demand speedy remedy. The present system of medical education appears to be a compromise between the competing claims of various sciences. The medical student passes through many hands and the teacher of each branch tends to claim

fading grey of dermoid hair in old age, and especially records of any cases in which the hair had remained dark-coloured in a dermoid cyst while at the same time turning grey on the head of the individual. 4. Records of the colour of the hair in each cyst in cases of bilateral dermoids; I have found that the hair is sometimes of the dark type in one cyst and the light type in the other in the same patient. 5. Information from veterinary surgeons as to the colour and character of the hair and epithelial appendages found in the ovarian dermoids of animals, together with the nature and colour of the body covering. 6. The colour and character of hair found in dermoids in other organs of the body, excluding purely inclusive cysts, or "sequestration dermoids," in which the dermoid hair shares a common origin with that of the body surface.

Information bearing on these and any other points and material illustrating the observations would, I feel sure, prove of value.

I am, Sirs, yours faithfully,
C. J. BOND.

Leicester, Feb. 5th, 1905.

EUCALYPTOL AND "FAINTING": A WARNING.

To the Editors of THE LANCET.

SIRS.—The powerful and sometimes alarming effect of the volatile oil of the *Eucalyptus globulus* through the olfactory nerves, directly or indirectly upon the cardiac centres or intrinsic cardiac ganglia, is not widely enough known. It is an idiosyncrasy that warrants the respect of all devout churchgoers and of those who frequent places of public assembly conformed by a blind faith in the virtues of the drug as a prophylactic against catarrh. I quote an excerpt from the graphic pen of my son, aged 13 years, now at a preparatory school. The language is expressive and emphatic and most consolatory to me, who for some time past have been somewhat uneasy as to the origin of certain mysterious "fainting" attacks in church. "To-day is glorious, sun shining, and blue sky. I am not going to church to-day as I have a cold, and also because I nearly fainted last Sunday. You see it was exactly the same time last year (the first Sunday of the term) that I really fainted. When I came into the church I smelt the same stink—is this the right expression?—namely, eucalyptus—I don't know if this is how you spell it, it doesn't look right—and I can't stand it, so I sat down, so Mr. J. told me I had better go out of church and I skitted right willingly."

My lad's idiosyncrasy is doubtless a maternal inheritance, my wife herself being absolutely unable to remain in an atmosphere impregnated with eucalyptol for more than a few moments without feeling faint, or, indeed, suffering from an alarming syncope attack and falling to the ground unconscious on one memorable occasion injuring her face severely in her fall. Merely passing through the eucalyptolized air of a druggist department in the "stores" or elsewhere is attended by a similar sensation. And, I may add, these attacks are genuine and devoid of "nerves," particularly so termed. My son inherits markedly his mother's physique and temperament. I pretend to no novel scientific discovery but crave desirable and necessary publicity for simple facts in the hope that they who have belief in the virtues of *Eucalyptus globulus* may at the same time temper their faith reasonably and respect the idiosyncrasies of others.

Personally I am an unbeliever, and in my practice never prescribe eucalyptol to combat the bacilli of nasal catarrh, rather pinning my faith upon a vigorous and efficacious "kerchief and nose drill"—and especially with young folk, deprecating the lazy habits of "sniffing" and avoidance of the use of the pocket-handkerchief, teaching that in the preliminary congestion of the mucous membrane of the nasal tract and the secondary copious and beneficent secretion of fluid, the Dame Nature's efforts towards the expulsion of the distressing bacilli.

And it is well known that many drugs beside eucalyptol possess most powerful effects when inhaled, even in minute quantities. One patient needs only to walk through a ward or room in which the boards have been "beeswaxed and turpentine" to experience a copious diuresis possessing the well-known odour of "violets"; another has but to be in the immediate neighbourhood of a phial of acid hydrocyanic, dil. when the stopper is removed to experience a most distinct sensation of "faintness." But to my medical brethren these facts are well known and I need not dilate upon them. I only desire that this knowledge should be "understand-

of the people" for reasons above stated, and I beg you to publish my communication, hoping that some of the numerous Church papers will deign to notice and copy.

I am, Sirs, yours faithfully,

Woolford, Feb. 5th, 1905.

HUGHES R. DAVIES.

OVERLYING.

To the Editors of THE LANCET.

SIRS.—Your leading article on this subject discusses the desirability of inflicting punishment for causing the death of a child by overlying. The result of a case tried by Mr. Justice Phillimore at Chester in July last shows that so to cause the death of a child is already a criminal offence at common law. A woman was indicted for the manslaughter of her infant child. It was proved that while she was drunk she took the child to bed with her in spite of the remonstrance of her eldest daughter. She was found asleep with her arm pressing on the face of the child, who was dead. She was found guilty and sentenced to 21 months' imprisonment with hard labour.

In his "History of the Criminal Law" Mr. Justice Stephen says: "No involuntary action, whatever effects it may produce, amounts to a crime by the law of England. I don't know that it has ever been suggested that a person who in his sleep set fire to a house or caused the death of another would be guilty of arson or murder." Until this case occurred I have never heard that a woman has been prosecuted in this country for thus causing the death of a child, though I am told that it is a criminal offence in Germany where prosecutions for it are not infrequent. There is nothing in the *Times* report of the case to show whether the offence was regarded as criminal negligence or on what ground the verdict was obtained. In this case the overlying mother was drunk, but it is not probable that that fact makes any difference in the law applicable to the case, which proves beyond question that, in some cases at any rate, it is already at common law a criminal offence to cause the death of a child by overlying.

Wimpole-street, W., Feb. 3rd, 1905.

I am, Sirs, yours faithfully,
CHARLES MERCER.

THE ELECTION OF A DIRECT REPRESENTATIVE FOR IRELAND UPON THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS.—Will you allow me through your columns to thank most cordially all those who voted for me at the recent election of a Direct Representative for Ireland and all those who worked for me so energetically? The result has been my defeat by four votes in a poll of 1835, but the gratification remains to me that I have retained the confidence of so many of my professional brethren in Ireland.

I am, Sirs, yours faithfully,

Dublin, Feb. 5th, 1905.

WILLIAM THOMSON.

THE LONGFORD COUNTY INFIRMARY.

To the Editors of THE LANCET.

SIRS.—With reference to the remarks of one of your correspondents in THE LANCET of Jan. 27th, p. 251, about medical and surgical appliances in Longford County Infirmary, I am authorised to state that the matron has nothing whatever to do with the ordering of the same, and that the registrar only orders them when told by the surgeon to do so.

I am, Sirs, yours faithfully,

Longford, Feb. 3rd, 1905.

Cox GORDON,
Assistant Registrar.

EVENING ATTENDANCE AT DISPENSARIES.

To the Editors of THE LANCET.

SIRS.—The Exeter Dispensary was established in 1818 and at present treats from 5000 to 6000 patients per annum. The inconvenience caused to some of the working classes by advice there being only available during the forenoon has suggested the advisability of opening the institution for such persons for an hour or two on two or three evenings each week. In objection to this Mr. Charles E. Bell of this city, one of our consulting surgeons,

numbers of cows have died, and possibly their milk is mixed with cows' and buffalo milk for consumption. With the facts as stated above I hold that Egypt must definitely be added to the localities in which Malta fever occurs.

I am, Sirs, yours faithfully,

LLEWELLYN PHILLIPS,

Physician, Kasr-el-Aini Hospital, Cairo, and Professor
of Clinical Medicine in the Egyptian Government
School of Medicine.

Cairo, Jan. 12th, 1906.

SOME EXPERIMENTS IN HYPNOSIS.

To the Editors of THE LANCET.

SIRS,—Dr. Edwin Ash's article in THE LANCET of Jan. 27th, p. 216, under the above heading is interesting in many respects but there are some items that demand criticism and others not difficult to explain. It is gratifying, however, to note that the phenomena of hypnosis are now being clinically tested by various medical men in this country and it is to be hoped that the therapeutical benefit which this so-called occult science is capable of conferring on the human subject will be more universally adopted than hitherto. There is no doubt that if stage exhibitions were prohibited by law more medical men would be willing to inquire into its nature and the manner of its use and would no longer regard it as one of the curiosities of science. Surveying briefly Dr. Ash's article I shall begin by taking the early parts of his statements. He says: "The fact that the term 'hypnosis' implies either sleep or some condition resembling sleep is likely to be a source of difficulty to the unpractised operator." This statement is correct if we limit the term hypnosis to sleep or some condition resembling sleep. Such a view, however, is entirely inaccurate. To define hypnosis as sleep or a condition resembling it is to give a narrow definition to the term and to overlook the phenomena which suggestion may bring about independently of sleep. Hypnosis may be defined as the induction of a peculiar psychical condition which increases the susceptibility to suggestion. It is true that suggestion reaches its maximum in deep sleep, but it is not absolutely necessary that sleep should occur to bring about beneficial results. Here is one of my own cases which I quote in point. A young woman, aged 19 years, was suffering from severe supraorbital neuralgia of ten days' duration. I suggest sleep; she says that she cannot sleep. I tell her, however, that sleep is not necessary to cure her; drowsiness is sufficient. She says that she feels very drowsy. It is impossible to get her beyond this stage. After three or four *séances* of drowsiness the neuralgia disappeared; she is now free from recurrence three months.

Experiments with Subject 1—In Dr. Ash's reference here he says that catalepsy can be most readily induced by directing the subject's attention to any part by gently stroking it. Although this is true in many cases it does not occur in all. Catalepsy can be induced more readily in all subjects by fixing the attitude of the limb in the patient's brain by simply lifting the limb up and retaining it in position for a very short period. The position given to the limb by the operator is accepted by the patient's brain like an imagined suggestion. The cerebral spontaneity is more likely to be suppressed by an attitude of the limb than by stroking. In pathological conditions, owing to suppression of cerebral spontaneity, we sometimes observe this cataleptic condition, as in typhoid fever. Further on in his article Dr. Ash says: "Most authors say that drowsiness alone constitutes the first stage," and then he says, "Surely such an admission is absurd." This reasoning is neither sound nor accurate. My case of supraorbital neuralgia disproves this reasoning of absurdity. Here was a young woman cured of neuralgia although she was only a drowsy subject. Surely this is hypnotic influence although of light shade, yet it proves beneficial in some of these cases.

Experiment with Subject 6—In allusion to this part of his article Dr. Ash says that he takes it that certain forms of headache or neuralgia can be relieved. I have had a great number of cases of headache and neuralgia which have been cured entirely by hypnosis. It is easy to understand the rationale of the cure in these cases. Pain makes the patient think of his trouble, and thinking of it he exaggerates it; hypnosis, which distracts his attention, acts in a contrary way upon the pain—it diminishes it by making him think no more of it.

Experiment with Subject 3—Here was a case where there

arose the difficulty of arousing the subject. This is a danger that sometimes occurs and is important to recognise. After being hypnotised some subjects preserve the disposition to go to sleep spontaneously; some are hardly awakened when they fall to sleep again in the same hypnotic sleep. In other cases they fall asleep during the day. This occurred during my early experience of hypnosis, but experience taught me that it practically need never occur if one takes care to repress this auto-hypnotisation by suggestion. It is sufficient to state to the subject during sleep that when once awakened he will be completely awake and will not be able to go to sleep again spontaneously during the day.

As to the after-effects I can only agree with Dr. Ash's experience that in no case did I notice anything which would lead me to suspect any mental condition supervening on the hypnosis. Doubtless inoffensive hallucinations provoked at long intervals, whether hypnotic or post-hypnotic, trouble the mind momentarily in the same way as do dreams, but the equilibrium is quickly re-established as soon as the hallucinatory dream has disappeared. I should not like to say, however, that in unskilful hands and that with certain delicate brains predisposed to mental alienation serious harm from inopportune and awkward hallucinating experiments could not result. I can only speak from my own experience which now totals a large number of cases in general practice.

I am, Sirs, yours faithfully,

JOHN R. O'BRIEN, M.D. Brux., L.R.C.P. Irel., &c.
North Kensington, W., Jan. 26th, 1906.

THE COLOUR OF THE HAIR IN OVARIAN DERMoids.

To the Editors of THE LANCET.

SIRS,—I have been for some years interested in the colour and character of the hair found in ovarian dermoids and I am anxious, with the help of the columns of THE LANCET, to collect further information on this point. The facts, as far as I have been able to collect them, suggest the generalisation that for the most part there are two colour types in the hair found in ovarian dermoids in European women, one dark and one pale, corresponding, I venture to suggest, to two primitive races, a pale northern and a dark southern race. This must not be taken too rigidly, as cases occur in which the colour of the hair is intermediate between these two extremes and from the long and intimate fusion of types we should at first sight expect this intermediate character to be the rule instead of the exception, but we must remember, on the other hand, that modern views of the continuity of the germ plasma may throw light on this point. Further, inasmuch as the follicular or germinal epithelial cells, in which dermoid structures originate, are not somatic in origin, that is, are not the direct descendants of the body epithelium of the patient or host, the frequent want of correspondence in colour between the dermoid hair and the hair of the body of the individual is what we should expect. Whereas, on the other hand, if this follicular epithelium is simply regarded as somatic in origin, and on the same level as the epithelium of the individual's skin, then the discrepancy in the result of their function is difficult to explain. I am aware that Bland-Sutton remarks on the capriciousness of the colour of dermoid hair. In spite of this statement, however, I feel sure that a larger collection of observations bearing on this easily observed and easily retorted phenomenon would be valuable, not only in filling up certain gaps in pathological knowledge, but also as bearing on the larger subject of heredity.

I venture, therefore, to appeal through your columns to medical men and veterinary surgeons in England and abroad to record in THE LANCET, or if more convenient to forward to me, information on the following points: 1. Observations on the colour of the hair in ovarian dermoids in the negro races, together with a record of the age, race, and hair type of the individual. A small portion of the dermoid hair, after washing in ether, together with the hair of the individual, can be readily transmitted by post and would afford valuable information as to negro characters on microscopical examination. 2. Observations on the colour of dermoid hair and that of the individual in women of European and other races. 3. Observations (with the hair) from dermoids in elderly women, bearing on the question of the

illegitimacy; our county asylums and our criminal records speak only too clearly for themselves, but it is worthy of note that such diseases as tubercle and rheumatism are not the only results of the badly housed labourer.

What is to be the means of preventing or putting right this state of things? First, we must seek the cause; this is, as a rule, very simple; 99 per cent. of the worst class of houses belong to the *small man*, the village landlord; those who live in rural districts know how tumble-down cottages are bought up as investments, patched together, and let to the poor. Compare the cottages on a properly conducted estate under a capable agent. The chief cause of badly constructed, badly kept cottages is the fact that such cottages belong to some man who demands a certain sum every week from his tenant and who generally sees that he gets it, whatever the condition of the cottage may be. Local government is useless as a means of inspecting and condemning such cottages. It is not unknown for an owner of the disgraceful cottages to be a member of such a council, and it is obvious that if any legislation can benefit this matter of national importance it must come from a higher place than a parish council. This question of our labourers' cottages is one that should be looked into in the near future, not only as a means of checking the spread of all kinds of disease, but also to prevent our agricultural districts from being inhabited by future generations of illegitimate children.

I am, Sirs, yours faithfully,
SUFFOLK POOR-LAW MEDICAL OFFICER.

Feb. 5th, 1906.

THE HEALTH OF MADEIRA.

To the Editors of THE LANCET.

SIRS,—On Nov. 27th last the wife of a barber in this city was said to be suffering from an "infectious fever." No more definite diagnosis being offered she was hurried with her family, servants included, to be interned in the lazaretto. Rapidly after this others were daily taken: sometimes a single individual, at others whole families. On arrival at the lazaretto all were stripped and their clothing taken from them. Women and young girls, naked save for a sort of chemise, which began tardily and ended much too abruptly, were disinfected with some fluid poured on them from a watering-can with a rose to it, as they stood up. They were then made to lie down and were covered with a sheet which was also well watered from the can, and then the bed itself was freely sprinkled. They were left in this moist condition to their own devices. This process was repeated twice more in the day. You will no doubt be astonished to learn this body disinfection was carried out in all its details by a policeman! The services of nurses from the sisterhoods here were freely offered but declined.

On Nov. 30th the local papers announced that the patients mentioned above—more of the family had sickened in the interval—were doing well. On Dec. 1st the barber's wife died. If she were treated on the lines indicated above is it to be wondered at, whatever may have been the complaint from which she suffered? Rumours of plague began to circulate but the subject was always discussed with bated breath. The health officers contented themselves with announcing that although there existed amongst us a few cases of "infectious fever" the health and sanitary condition of the city and port were good. People suddenly were perplexed and alarmed when they found friends who had been ill for some time with known diseases hurried to the lazaretto without any fresh symptom. One with a chronic ulcer of the leg—a diabetic—went in and quickly died there. Others were known to be suffering from rheumatism, influenza, and simple pneumonia. Even a poor but harmless lunatic was carted off and detained until his habits, which were indecent, and his language, which was unparliamentary, gained for him his liberty, for in spite of the "plague" they turned him out to spread it. Nobody believed in the "plague" but an interested few.

Things went on in this unsatisfactory way until about the beginning of January, when two soldiers, from curiosity it is supposed, strayed into the grounds of the lazaretto. After being discovered they were detained, stripped, and well watered. Soon they managed to get a note conveyed to the barracks asking their comrades to come and release them. Accordingly, on Sunday, Jan. 7th, about a hundred soldiers assembled, and, dividing themselves into two parties, marched to the relief of their friends. With the soldiers, however, went a thousand other folks. The soldiers

found their naked comrades, enveloped them in sheets, and carried them in triumph to the barracks. Meanwhile the people made good use of their time, they broke doors and windows, smashed all the medical outfit they could find, and rendered the place uninhabitable for some time to come. All the patients were hastily wrapped in sheets and, almost naked as they were, were carried to their homes. One poor woman (who had been interned with her supposed plague stricken husband) had only been confined two days and was, with her naked little baby, enveloped in a sheet and a hastily borrowed petticoat, whilst her husband was adorned with another man's trousers. All reached home safely, where they have remained undisturbed. Strange to say, none of them has died. Naturally, the hatred of the people has fallen most heavily on the doctor in charge of the lazaretto, who is also the official bacteriologist, and he has been compelled to seek refuge on the cruiser *Don Carlos*. In spite of this supposed epidemic the death-rate in this city of 40 000 inhabitants is only two in excess (for the months of November and December) of the corresponding months of the previous year. As a matter of absolute fact, the health of Madeira has never been better for some years. The people of Madeira are exceedingly patient, but they have been roused; yet no one need stay away from fear of plague or molestation.

During all this time the consuls have been allowed to issue clean bills of health to ships calling at our port, which if an epidemic really existed is a very grave act of dishonesty and liable to lead to disastrous results. The whole business is a disgrace to those concerned, as it has entailed unmerited suspicion on the sanitary condition of our island and caused great loss of trade to the merchants, hotel-keepers, and others in a more humble sphere who depend for their livelihood on the influx of visitors.

I am, Sirs, yours faithfully,

Funchal, Madeira, Jan. 22nd, 1906.

B. R. C.

* * A brief note from Mr. Geddes Scott referred to some of these circumstances in our columns last week.—ED. L.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE principal, Sir Oliver Lodge, is still away but good accounts have been received of his progress towards complete recovery and it is hoped that he may be able to be present at the annual meeting of the court of governors on Feb. 21st.—Professor Watts, the assistant professor of geology, has been elected to an appointment in the Royal College of Science, London; therefore at the end of this term the University will lose a valued member of its staff who is distinguished alike both for teaching and for the excellence of his researches. This is the fifth appointment in other institutions which has fallen to members of the University staff during the last five years.—The University library has just received a splendid gift of 3000 valuable books from Mr. Thomas Corbett of Impney. At present the library is growing rapidly and additional accommodation will soon be needed unless the plan of breaking up the main library into departmental sections, which has been necessitated by the erection of the new buildings at Bournbrook, is further developed. From a medical point of view the University library is by no means complete, but it is rumoured that negotiations are on foot with the object of making the libraries of the University and the Medical Institute available for members of both institutions.—Mr. Cope, the chief librarian of the University, has just completed his twenty-fifth year of service and the event was celebrated by the members of the University staff presenting to Mr. Cope a clock and a cheque as a token of their appreciation of his untiring energy and enthusiasm in the cause of the library and his unfailing courtesy to those who make use of it.

Local Charities.

Probate has been granted in the will of the late Mr. John Feeney and it appears that at some period, not less than five years hence, the General Hospital will receive £10,000 from the executors, whilst the Queen's Hospital, the General Dispensary, the Eye Hospital, the Children's Hospital, the Blind Asylum, the Wolverhampton Hospital Infirmary, and

asserts that no dispensary exists in this country where evening consultations are available. Is it not possible that Mr. Bell is in error in this impression? If so, may I ask the name of a dispensary or dispensaries where patients do receive the benefits of such charities after their ordinary working hours? As a member of the weekly board of management of the Exeter Dispensary for 30 years I crave and shall be grateful for information upon this point.

Exeter, Jan. 25th, 1906.

I am, Sirs, yours faithfully,

HARRY HEMS.

* * We understand that most of the dispensaries comparable to the Exeter Dispensary in Liverpool, Manchester, Birmingham, and Leeds are closed in the evenings, save, of course, for the treatment of casualties. Certain provident dispensaries are, however, open. Our readers can perhaps give Mr. Hems fuller information.—Ed. L.

ABERRANT VACCINIA.

To the Editors of THE LANCET.

SIRS,—With great interest I read Dr. M. Eden Paul's note in THE LANCET of Feb. 3rd of a case of aberrant vaccinia, more especially as I happened to see a case myself about three years ago. I was then in India in charge of a native regiment. Owing to a small outbreak of small-pox it was found necessary to vaccinate the whole of the native garrison who had not had small-pox or been recently vaccinated. Five days after this had been done a sepoy came to see me with a "sore" over the right malar bone. He was one of the recently vaccinated and the sore ran the typical course in every way of a vaccinia vesicle. With some difficulty (having warned all the sepoys against doing it) I elicited the fact that after the operation the man had attempted to allay the irritation by scratching his arm and also that he had a small abrasion on his cheek at that time. Judging from its appearance and course I have no doubt at all that the "sore" was a vaccinia vesicle. It was particularly interesting, in my opinion, from the fact that it was undoubtedly a case of auto-inoculation. This is the only occasion on which I have had an opportunity of seeing vaccination on a large scale and I should feel very interested to hear if such cases are at all common.—I am, Sirs, yours faithfully,

J. A. BARNES, M.R.C.S. Eng., L.R.O.P. Lond.

Bucklersbury, S.O., Feb. 4th, 1906.

HOME HYGIENE AND TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—The directors of St. Marylebone General Dispensary are desirous of expressing their appreciation of the importance and utility of the proposed innovation in relation to the spread of tuberculosis (a notice of which appeared in the press of Jan. 30th and THE LANCET, Feb. 3rd, p. 316) and which is about to be adopted by the committee of the Brompton Hospital in conjunction with Dr. A. Newsholme of Brighton. The "proposed innovation," however, forms a part of the generally accepted requirements for any complete scheme for the prevention of consumption and its value has long been recognised by the medical officers of the above dispensary. For a period of over three years our late senior physician, Dr. J. Edward Squire, assisted by our resident medical officer, Dr. E. B. Hulbert, with the entire concurrence and co-operation of our honorary physicians, has been actively engaged in carrying out a fairly complete scheme of visitation at the homes of consumptive patients. The object has been to see that proper precautions are taken to prevent the spread of the disease, to recommend sanitary and hygienic requirements for diminishing predisposition in those closely associated with the consumptive, and to advise other members of the family or inmates of the house to attend at the dispensary for examination for early detection of any commencing disease and for proper preventive treatment.

The number of old-standing and recent cases thus dealt with in the three years the system has been in operation exceeds 200. In over 160 of these voluntary notification was made to the medical officer of health of St. Marylebone, and a secondary notification to that official when subsequently any of these patients either changed their residence, died, or removed to hospital or infirmary. Cards of "advice to consumptives" are freely distributed; clinical histories are taken in all cases with special reference to relatives,

domicile (including other residents in tenement houses), intimate friends, or fellow workers. Disinfection of premises on death or removal is advised and arranged for, and all sufferers and suspects are urged to (and do) attend at the dispensary at frequent intervals for examination and treatment; care is taken to keep in touch with them, even to following up many who have drifted into our Marylebone Infirmary or Mount Vernon Hospital. The results obtained have more than compensated for the labour incurred, and did space permit many instances of direct value in appreciation of such a scheme could be quoted, but as the results and details of this investigation will, no doubt, shortly be made public, it is hardly necessary to press the point further in this letter.

My board of directors, however, feel strongly that should any scheme as that now to be taken in hand by the Brompton Hospital be entered upon it should be applied to London as a whole, when it would without doubt prove of great and immediate value to the public health. In this connection they would point out that what could be undertaken in this dispensary with so much success and encouragement could doubtless be also undertaken by the numerous local public or "general dispensaries," many of them, as in our case, holding an honourable record of over a century's work. These dispensaries, equipped for the treatment of patients either at the institution or at their own homes, possess a knowledge of the environment of the sick—an advantage which the general hospital and other forms of medical charities cannot possibly acquire.

My directors cannot but regret that notwithstanding the undoubted value of the work of "general dispensaries" and the facilities they have for active co-operation in the prevention and cure of disease their importance in that field of labour should be so underrated (even to the exclusion from the benefits of the King Edward's Hospital Fund). As a consequence, after the provision of necessary funds for everyday maintenance there is little left for clinical research or general aid in the vital work of preserving the public health, but there is little doubt that the staffs of these general dispensaries are as actively alive to matters affecting the public interest and welfare as those attached to the better-known and larger institutions, and where funds permit the general dispensaries are not found behindhand in up-to-date and progressive treatment.

I am, Sirs, yours faithfully,

FRANK STOKES, Secretary.

St. Marylebone General Dispensary, Feb. 6th, 1906.

HYGIENE OF COTTAGES IN AGRICULTURAL DISTRICTS.

To the Editors of THE LANCET.

SIRS,—As one now residing in the eastern counties I can fully endorse the statements in the letter quoted by you in the course of your article on this subject which appeared in THE LANCET of Jan. 27th, p. 248. There are, however, two points to which I should like to draw your attention: one is the prevalence of pulmonary tuberculosis as a result of families occupying badly ventilated cottages previously occupied by those in all stages of the disease, the other is the obvious connexion between the state of the labourer's cottage and the high rate of illegitimacy in those districts in which the cottage accommodation leaves much to be desired. For every 1000 births registered in the county of Norfolk 74 are illegitimate, in Herefordshire 85, and in Shropshire 80, all of which counties are great agricultural centres. In comparison Middlesex has 34, whilst such great industrial counties as Durham, Derby, and Lancashire average but 41. It is a well-known fact that the farm labourer in Scotland is very poorly housed and in one rural district in that country the percentage of illegitimate children is 18.4. From these figures it can be seen that the proportion is very much higher in agricultural districts. That the sleeping accommodation is bad will not alone give us the explanation; most of the mothers are quite young girls and there can be no doubt that it is the want of proper dwelling rooms that is the chief factor in causing such girls to prefer being out and about rather than herd together with their little brothers and sisters at home. As a result of deficient sleeping room children are brought up to disregard those rules which decorum demands and are invariably the ones from whom the next generation of illegitimate children are born. I need not dwell upon the results of this deplorable amount of

wards or beds in the infirmary. A joint committee was accordingly appointed and the report which it had adopted was now under consideration by the authorities. The movement emanated from the University and it would be the desire of the trustees of the Royal Infirmary, he felt sure, to further any movement of the kind which would be in the best interests both of the University and the Royal Infirmary. He would also remind the trustees that the University really owed its origin to the Royal Infirmary. Mr. Edward Newley, the chairman of the committee, in seconding the adoption of the report, congratulated Sir James Barr, the senior physician, on the knighthood conferred upon him, an honour which they all appreciated very much.

The Infirmary for Children: Progress of the New Building.

At the annual meeting of the subscribers to this institution held on Jan. 31st the report of the committee stated that the erection of the administrative block and the east pavilion, at a cost of £25,000, was progressing satisfactorily and that there was every reason to believe that they would be completed in the autumn. But to fit them for the accommodation of patients it was necessary that further sections of the scheme should be proceeded with and in June last the committee gave instructions for the erection of the observation block and a portion of the laundry, at a cost of £5,000, which, with the £25,000 already mentioned, would practically exhaust the balance which the treasurer had in hand. It seemed an astonishing fact that in a city which was conspicuous for its splendid charitable institutions and hospitals, when they came to plead the cause of the children they should meet with such little response. They had collected £49,000 towards the new building and of that sum £30,000 had been subscribed by 30 individuals or firms. The remaining £19,000 had been subscribed by some 400 contributors, so that it will be seen that a much more general response on the part of the public is to be looked for, an additional sum of £20,000 being required to complete the scheme. The committee appeals for corporate help, which on a former occasion met with an unfavourable response.

Examination for the Indian Medical Service.

At the recent examination of candidates for the Indian Medical Service Mr. Harry W. Pierpoint, F.R.C.S. Eng., a student of the University of Liverpool and the Liverpool Royal Infirmary, obtained first place with an aggregate of 3761 marks, thus creating a record in obtaining a higher number of marks than have ever been gained in this examination. This is particularly gratifying to the members of the University and the Royal Infirmary where, needless to state, Mr. Pierpoint was noted for his industry. He has held several minor appointments at the Royal Infirmary.

Liverpool Chamber of Commerce and Malaria.

A letter has been received from Mr. John Holt, the vice-chairman of the African trade section of the Chamber of Commerce, calling attention to the serious loss of life among the crews of the ships which towed the floating dock *Sir Alfred Forcados*, and suggesting that the Chamber of Commerce should ask the Board of Trade to compel all vessels visiting the tropics to adopt such special means as may be suggested by the best scientific authorities, with a view to the prevention of tropical diseases on board in the interests of their crews. The committee came to no conclusion in the matter but agreed to reconsider it with a view of making some suggestions to the Board of Trade.

The Unemployed Problem in Birkenhead: General Decrease in Workhouse Statistics.

At the fortnightly meeting of the Birkenhead guardians held on Jan. 30th the chairman of the finance committee stated that the population of the workhouse at present was 955, as compared with 559 at the same period of last year. In the past fortnight outdoor relief had been given to 1635 persons, as against 1639 12 months ago, and in the "scattered homes" there were 124 children, a decrease of 17, as compared with the corresponding date of 1935. From this it would seem that there was a general decrease in all departments. This had been going on steadily for several months and it was thought a very welcome sign of the times.

Ptomaine Poisoning from Potted Meat.

A considerable number of serious cases of ptomaine poisoning said to be due to the consumption of a tainted

article of food, have occurred at Accrington. So far over a score of sufferers, all residing in the Woodcock district, have been medically treated, some of the cases being of a dangerous character, though it is hoped all will recover. In at least two instances whole households are affected. In one family three members were seized with illness, while two escaped. The medical officer of health (Dr. A. Greenhalgh) seized a quantity of suspected potted meat and this, on being analysed, was declared to be responsible for the wholesale poisoning. The source of supply was at once stopped.

Feb. 6th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Sale of Poisons.

As a consequence of the success of the appeal in the case of the sale of Rankin's ointment, which was commented on in this column on Jan. 6th and in which it will be remembered that the conviction by the stipendiary magistrate was not sustained, a number of informations laid against druggists in respect of the sale of poisons were dismissed by the same magistrate. The stipendiary, without criticising the decision of the higher court, called attention to the great importance of the decision. He said that not a few coroners, magistrates, and officers of police who were daily confronted with the difficulties that arose in cases of poisoning had for long been anxious to secure further restrictions in the sale of poisons. Their anxiety would not be lessened by the knowledge that compounds containing fatal doses of strychnine and other dangerous agents may be purchased from registered druggists indiscriminately by strangers without inquiry or record—that is to say, if the compound had been sold in good faith as a vermin-killer—however mischievous might be the real object of the purchaser. One cannot but agree with the remarks of the learned stipendiary, for the facilities for obtaining large quantities of poisons and deleterious drugs in this country appear to be very great.

Sale of Margarine as Fresh Butter.

A "butter dealer" was charged at Skipton with selling margarine as fresh butter. The market price of fresh butter at Skipton was 1s. 4d. and that of the commodity offered for sale by the accused was 1s. The basket of the defendant was found to contain paper wrappers on which was printed the word margarine but the basket itself was not so labeled as is required by law, and ordinary white paper, such as is used for wrapping up fresh butter, was used in the case of the upper layers of margarine. It is satisfactory to note that a fine of 40s. and costs was imposed and that an application for time in which to pay was refused.

Hospital for Women and Children.

The fifty-third annual report was presented at the meeting of the subscribers of this charity which was held on Jan. 25th. The report dealt with a period of 12 months, during which the whole of the new hospital was available for work, and as might have been expected the increase in the amount of work accomplished was seen to be considerable. The total number of in-patients in 1901, when the work was being carried on in the old institution, was 293; in 1904, when the new hospital was being used during a part of the year, it rose to 577, and in the year just closed it reached 727. This number was made up of 535 patients suffering from affections peculiar to women, of 77 maternity cases, and of 115 children. A similar but perhaps less striking increase was seen in the figures dealing with out-patients. The average number of beds occupied was 47. To the great regret of all connected with the hospital Mr. Charles J. Wright, professor of midwifery at the University, who has been surgeon to the institution for many years, has tendered his resignation, and in accepting this the committee reported that it desired to place on record its very high appreciation of the value of his services over the long period of nearly 22 years, not only as a member of the surgical staff but as one of the governing body. In harmony with the rules of the institution, Professor Wright retains the right to use two beds in the hospital. This admirable rule, which is framed on the same lines as the rules which regulate the status of the consulting staff at the infirmary, secures for the institutions of Leeds the services during their partial retirement of men who have gained their experience

the Coventry Hospital will each receive £1000.—The late Mr. Thomas Mabbut of Edgbaston has left £1250 to the General Hospital for the purpose of endowing a bed to be called "The Thomas Mabbut Bed," and he has devised £100 each to the Queen's Hospital, the Children's Hospital, the Deaf and Dumb Hospital, the Blind Asylum, the Ear and Throat Hospital, the Skin and Lock Hospital, the General Dispensary, and the Orthopedic Hospital.—There has been some difficulty about a sum of £20,000 left by a lady to the Birmingham and Midland Hospital for Women "towards the rebuilding and equipment, to the satisfaction and under the control of my executors," but the ruling of Mr. Justice Kekewich has made the matter clear and the hospital will no doubt profit by the sum which the testatrix obviously intended should be devoted to its interests.—The annual reports of some of the medical charitable institutions in the adjacent towns show that admirable work is being done in the district. The Wolverhampton Hospital Sunday committee reports the collection of £632, as contrasted with £614 in the previous year, and it has allocated the money to the local hospitals. The Worcester Ophthalmic Hospital reports increased work, increased income, and reduced expenditure for the past year. The report of the Bromsgrove Cottage Hospital is less satisfactory, inasmuch as the expenditure exceeded the income, but it shows a large amount of work well done. During the year 208 patients were treated, of which 185 were cured, ten relieved, one unrelieved, three died, and nine remained under treatment.

Decrease of the Birth-rate and Death-rate.

For a number of years the general birth-rate of Birmingham has been falling and the medical officer of health in his last quarterly report points out that the number of births in the last quarter of 1905 is the lowest on record in that period, the number of births being 3648, as contrasted with 4017 and 4078 in the same quarters of the two preceding years. On the other hand, the mortality-rate of the city was 16·3 per 1000, which is the lowest record for the last quarter of the year. I sent you these figures last week and should now like to add that a very interesting and satisfactory feature is the lowness of the death-rate in All Saints, Bordesley, Balsall Heath, and Salford wards which are largely populated by artisans. In these wards the death-rate varied from 12·8 to 14·2 per 1000. A still more satisfactory feature of the report is the comparatively low infant mortality-rate in many of the wards occupied by the artisan classes.

Chain-making and Physical Deterioration.

The question of physical deterioration due to the conditions existing in the chain-making industry is one of considerable importance in this district and it is distinctly reassuring to find, after the definitely expressed opinions to the contrary, that the making of small chains at all events is a healthy occupation. At least, this is the conclusion that Mr. J. H. Wilkinson, the medical officer of Dudley, has arrived at after a careful inspection of a number of chain-making shops in the Netherton district. He is convinced, apparently, that there is no physical degeneration as a result of the work.

The Birmingham Anti-Corset League.

In common with some other towns Birmingham possesses a society which devotes itself to persuading the female portion of the community that they are doing great injury to themselves by wearing the very universally adopted corset. The members of the society are enthusiastic; they elaborate and demonstrate their views on all favourable occasions and in a little over two years they have increased their members to 90, two-thirds of the whole being ladies. They congratulate themselves on an increasing demand for reformed dress outfits, yet it is obvious that their millennium is still far distant, for, in spite of lectures which demonstrate the distortion and displacement of internal organs and the interference with organic functions caused by badly fitting or too tight corsets, women see that women, on the whole, are as healthy as men and that they walk more gracefully and look much prettier than men who, presumably, do not wear corsets. Moreover, and this is, perhaps, the greatest stumbling-block in the path of the Anti-Corset Leaguers, it must be admitted that women who wear corsets look "smarter" than the majority of women who wear reformed dress and, as the records of Egyptian tombs show, it has been woman's desire for many thousands of years to look "smart."

The Warley Woods.

We have practically reached the realisation of the endeavour to secure this desirable breathing space for the city. The voluntary committee formed for the purpose of acquiring the ground evidently arrived at the conclusion that it could not itself get the £28,000 which was required to complete the purchase. In these circumstances it offered the 26 acres of land it had already purchased and somewhat less than £15,000 which it had collected to the city on condition that the city would purchase the additional 94 acres of land over which it had acquired the option of purchase. The general purposes committee of the council has considered the matter and will recommend the council to accept the offer, which is made through Mr. A. M. Chance, and to instruct the finance committee to borrow the sum of £28,000. In all probability the council, acting with its usual foresight and wisdom in such matters, will accept the recommendation and take the necessary steps. It is true that other districts nearer the Woods will profit by such a broadminded action, whilst they have shown but little alacrity to bear what may be considered a fair share of the expense, but after all those districts will eventually be part of the city.

Feb. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Grant of a Royal Charter; The Need of a New Out-patient Department.

THE annual meeting of the trustees of the Royal Infirmary was held on Jan. 25th in the board room of the institution, Mr. Robert Gladstone, the president, being in the chair. Mr. Ralph Brocklebank, the honorary treasurer, in submitting the financial statement, alluded to the grant of a Royal charter which His Majesty confirmed by letters patent on August 28th last. The committee was of opinion that the objects of the infirmary would be more effectively attained and a larger measure of public support given to it in the future if a Royal charter of incorporation were obtained. Difficulties had arisen in the management of the property by reason of it being vested in the hands of a changing body of trustees which, by the charter, have been overcome. The laws and rules for the management which existed remain practically the same, the powers of the trustees in that respect not being abridged. The out-patient department has for some time proved insufficient for the constantly increasing demands on it. This is convincingly demonstrated by last year's figures, 89,224 attendances being recorded, an increase on the previous year of 13,256. Plans and schemes for its enlargement have been under constant consideration during the year. Many questions have had to be faced which, it is hoped, are in course of being solved, so that the committee will shortly be in a position to lay before the public propositions which will commend themselves as being all that is desired to bring this most essential department up to what is so urgently needed. A sum of £3700 has been received from the Sir William Mitchell Banks Memorial Fund which it was agreed should be applied to this object. Three beds have been endowed during the year—two by the trustees of the late Henry Bloom Noble of Douglas, Isle of Man; and one in memory of the late Miss Elizabeth Earle, by her brother, Mr. Arthur Earle. Also, through the generosity of Mr. E. R. Bickersteth, consulting surgeon to the infirmary, the upper part of old Dover-street, opposite the nurses' home, has been laid out as a recreation ground for the nurses. The "free" receipts have been £12,650 and the expenditure £16,019. The adverse balance is £3279. A large adverse balance stands against the convalescent patients' fund and the committee appeals for help for this most useful fund. The President, in moving the adoption of the report, said that he would be very sorry to see the maintenance of such institutions as the Royal Infirmary transferred to the rates or made part of the public expenditure of the country. During the past year a very interesting event had taken place in connexion with the University of Liverpool. A deputation from the University waited upon the committee of the Royal Infirmary and suggested that a joint committee should be appointed of the University and the infirmary with the view of enabling the holders of the professorships of medicine and surgery in the University to have charge of

University sports. 9 a.m.: Students' ball in the music hall. 9.30 p.m.: Reception in art gallery by the President and members of the committee of the art gallery (capacity 500).

Friday, Sept. 1st.—Excursions within and without the city. Arrangements would be made for a special train to Ballater and luncheon would be provided at the cost of the University for delegates and guests who desired to avail themselves of this excursion for seeing Deeside. 9 p.m.: Students' symposium and addresses to the students by distinguished guests in the music hall.

Saturday, Sept. 2nd.—Delegates and guests leave Aberdeen.

The general committee, which numbers about 50, has delegated the completion and carrying out of the arrangements to a small executive committee of ten, to be known as the "conveners' committee," and to consist of the Principal, convener; the Lord Rector's assessor, Mr. J. E. Crombie, vice-convener; the Lord Provost; the convener of the finance committee, Professor Hay; the convener of the hospitality committee, Mr. James Murray, Glenburnie Park; the convener of the publications' committee, Mr. P. J. Anderson; the convener of the general council committee, Mr. Patrick Cooper; the town council's assessor, Mr. Alexander Wilson; the President of the S.R.C., Mr. A. R. Williamson; and Professor Davidson.

Feb. 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Direct Representation of Ireland on the General Medical Council.

THE election of a Direct Representative of the medical practitioners of Ireland took place recently on the conclusion of Sir William Thomson's second term of office when he offered himself for re-election. Dr. Leonard Kidd of Enniskillen, late President of the Irish Medical Association, came forward and after an exhaustive poll was returned by a very narrow majority.

Presentation to Dr. James Craig.

A special meeting of the Royal College of Physicians of Ireland was convened on Feb. 2nd in order to afford the President and Fellows of the College an opportunity of offering their congratulations and making a presentation to Dr. James Craig, Fellow and Registrar, on the occasion of his approaching marriage. The President, Sir William Smyly, referred to the signal services which Dr. Craig had rendered to the College during his long term as registrar and concluded by presenting him with a cabinet of silver plate and an album containing the photographs of the Fellows of the College.

Forster Green Hospital, Belfast.

At the annual meeting of the friends of the Forster Green Hospital for Consumption and Chest Diseases, held in Belfast on Jan. 30th, it was reported that 160 intern patients had been treated during the year 1905, while in the extern department there had been 1417 attendances, of which 525 were new cases. The income for the year has been sufficient to meet the expenditure owing to a special subscription; but the deficiency in the previous two years still leaves a balance upon the wrong side amounting to £241. Special reference was made to the loss sustained by the institution in the death of Dr. H. S. Pardon who was consulting physician.

Newtownards Nursing Society.

The Marchioness of Londonderry, who presided on Jan. 30th at the annual meeting of the Newtownards Nursing Society, in moving the adoption of the report, gave an interesting address on the objects and aims of district nursing. She referred specially to the importance of proper obstetric nursing conducted on modern scientific lines.

Health of Belfast.

The report as to the health of Belfast from Dec. 17th, 1905, to Jan. 20th, 1906, presented to the corporation of Belfast on Feb. 1st showed that the outbreak of scarlet fever still continues (131 cases having been notified), although owing to the mild type of the disease the deaths are few. Typhoid fever (99 cases were notified) is also more prevalent, though the deaths from this disease are less. It is peculiar to find that there were six cases of typhus fever notified; five, however, occurred in one house, no cause for the outbreak being discovered. The total death-rate was 19.9, that for children under one year old was 4.1,

and that for persons of 60 years and upwards was 4.3 per 1000 of the population.

Rainfall in January.

During the month of January rain fell in the neighbourhood of Belfast on 23 days to the amount of 4.72 inches, which is above the average, 3.44 inches. Last year in the same month 2.61 inches fell. The weather throughout the month was of a depressing nature and it was the wettest January since 1903.

Feb. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Perforating Ulcer of the Stomach.

ON Jan. 10th, at a meeting of the Surgical Society, M. Bazy read, for M. Lapeyre, an account of two cases of perforating ulcer of the stomach treated by laparotomy and suture. In the first case the ulcer was situated on the lesser curvature and 53 hours elapsed between the occurrence of perforation and the operation. The patient was suffering from acute general peritonitis and died seven days after operation. The second case was that of a young woman in whom as the result of a perforating gastric ulcer, situated on the anterior face of the stomach, a gastric fistula occurred. M. Lapeyre excised the fistula and sutured the wound in the stomach. The operation was easy and the patient recovered completely but she died eight months later from acute pulmonary tuberculosis.

Chloride of Calcium as a Hemostatic.

The hæmostatic action of chloride of calcium is capable of being turned to good use in general surgery. M. Toubert, at a meeting of the Surgical Society held on Jan. 17th, gave sundry examples of this from his personal experience. He is in the habit of giving to his hospital patients a draught containing three grammes of calcium chloride to be taken in two or three doses, the last dose to be given an hour or two before the operation. He has used this plan in circumcision, radical cure of hernia, hydrocele or varicocele, removal of the appendix à froid, suture of bones, tenotomies, removal of adenoids, and other operations. In all these the hæmorrhage either stopped almost at once or within a little time. M. Toubert considers chloride of calcium preferable as a hæmostatic by reason of its quick action, its non-poisonous nature, and the ease with which it is employed to all drugs which are used by being applied to the wound or administered by injection or by the mouth.

The Treatment of Hydatid Cysts of the Liver.

At the same meeting M. Canut stated that the best means of treating hydatid cysts which could not be extirpated was to incise the cyst, to remove the lining membrane, and to sew up the wound. Direct union is very rare and generally the sac fills up with an aseptic serous exudation within the first few days after the operation. This, however, is soon reabsorbed. Sometimes the sac fills with bile which may not be aseptic and the sac may rupture where it is sutured. With a view to avoid any infection of the peritoneum M. Quénu said that a drain should be placed in the suture. M. Canut said that sometimes after the sac was emptied and the membrane was removed brown spots or stains could be seen on the sac wall. In this case the cavity should not be sutured, for these spots consisted of superficial biliary canals which always secrete bile. M. Tuffier agreed with this advice.

Paralysis of the Forearm treated successfully by Operation.

At the same meeting M. Potherat showed a patient on whom he had operated. After a fall on the elbow the patient developed complete paralysis of the region supplied by the ulnar nerve and the branches of the musculo-spiral nerve below the elbow. At the operation both the ulnar and the musculo-spiral nerves were found to be caught in a large bony mass lying over the condylar region. M. Potherat freed the ulnar nerve, which was completely divided; he then refreshed the ends and sutured them. By the evening of the operation not only had sensibility returned in the hand but the paralysis in the region supplied by the musculo-spiral nerve (*paralysie radiale*) had completely disappeared. M. Potherat added that he was content just to place these facts on record without trying to explain them.

Thursday, Sept. 20th.—11 A.M.: Conferring of degrees, Mitchell Hall. (Capacity about 1050 persons.) Luncheon by societies (Medical, Surgical, Advocates, &c.). 3 P.M.: Reception at King's College. Tea in the library or in a marquee on the recreation ground. Inter-

registered in 1895 and 1354 in 1905, and that of Greifswald where the students decreased from 875 to 692. Whilst the number of students in the other faculties has more than doubled since 1895, the number of medical students (and of Protestant theology likewise) has considerably decreased, the respective numbers being 7725 and 6032.

Feb. 5th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

A Canadian's View of the Tuberculosis Congress.

Dr. Elzéar Pelletier, secretary of the Board of Health of the province of Quebec, has just returned to Montreal after attending the Paris Congress on Tuberculosis. He gives his views of the Congress to the Canadian press, medical and otherwise, to the effect that what the Congress considered of primary importance was the sanitary condition of dwellings, as it is there that most of the incubation of disease takes place; and taking this as his cue he lectures Montreal as regards the construction of abodes in that city. Dr. Pelletier declares that Professor Vallée's message to the Congress has dealt a severe blow to Professor Koch's theory on the transmissibility of bovine tuberculosis. And in speaking of Professor Grancher's investigations he would apparently coincide with the findings of that practical investigator as they concern school-life and the pre-tuberculous lesions.

Vancouver General Hospital.

Twenty years ago Vancouver, British Columbia, was an unknown quantity in either civic or professional life of any character. The thought that within 20 years the wild and virgin forest of that beautiful, healthful province of Canada would yield a city of 50,000 inhabitants with the fine, modern, hospital facilities which have only recently been established and which are said to be second to none in all Canada, never occurred to the most sanguine temperament of any one located in British Columbia two decades ago. But such is the fact. Vancouver General Hospital to-day is a hospital that many a citizen of a more pretentious city might envy, and it is equipped and manned by all that is modern and by a staff that is highly capable and competent. No doubt many who come out to Toronto in August to attend the annual meeting of the British Medical Association will visit this western city, where they will be sure to meet with a welcome which will be as breezy as it will be hospitable. It is situated probably 2600 miles west of Toronto, a distance which is considered a mere trifle in this country, or rather I should say, colony. The report of the medical superintendent for the month of November (in the old hospital) showed that during that month 67 new patients had been admitted to the wards, of whom 53 were males and 14 were females. 69 were discharged during the month, 47 being males and 22 females, and at the end of the month there were in the hospital 50 patients. In the conduct of the new hospital at Vancouver it is proposed that the board of directors shall appoint a house committee, which will have the services of a permanent secretary, to manage the non-medical affairs of the hospital. It has also been arranged that any person making a contribution of \$100 to the hospital shall have the privilege of naming a life governor of the hospital.

Typhoid Fever in British Columbia.

In certain parts of the interior of the province of British Columbia during the past fall epidemics of typhoid fever have been raging to such an extent that the Provincial Board of Health deemed it necessary to despatch its regular health officer, Dr. C. J. Fagan of Victoria, to the respective scenes to make observations and investigations into the causes of the widespread prevalence of the disease. It makes one shudder to know that in an enlightened community, which has amongst its inhabitants medical men, lawyers, ministers, and teachers, a condition could exist as has been revealed by the investigations which have been carried on in the interests of sanitary science in the province of British Columbia. This refers particularly to the source of the infection, which has been traced to the milk-supply of certain places in that province. The entire matter has been taken in hand by the provincial health authorities of British Columbia and the energy which characterises the health officer of that province will soon bring about a very different state of affairs.

The Winnipeg General Hospital in 1905.

Winnipeg is a thriving city of Western Canada and the requirements for hospital accommodation keep well apace of the growth in population. And, indeed, it must, as the amount of work done in the Winnipeg General Hospital increases rapidly from year to year. In 1901 the number of patients treated in the wards was 2773; in 1902, 2923; in 1903, 3354; in 1904, 2868; and in 1905, 4366. The increases in the out-patient departments keep pace with those in the inside. In 1901 the number treated was 1607; in 1902, 1363; in 1903, 3493; in 1904, 4772; and in 1905, 5735. During 1905 332 patients died in the hospital, thus giving a percentage of 7.65. Of the total number of deaths 41 died within 24 hours of their admission.

The Proposed New Toronto General Hospital.

Matters in connexion with the proposed new Toronto General Hospital, though somewhat chaotic, are gradually assuming a shape from which in the very near future there will be a united and progressive advance. Meetings are being held weekly, if not almost in some weeks daily, conferences are being held, and calls for subscriptions and inauguration of special funds are the order of the day. There are now subscribed over \$1,000,000, but the work will not be pushed until at least \$1,500,000 have been subscribed. Amongst the latest subscriptions is one from the Medical Faculty of the University of Toronto of \$50,000, and a fund has been inaugurated by the retiring mayor of the city, to which he contributed \$100 and asks that 999 other citizens should join in this fund. It is gratifying to know that this fund is proving a popular one and already many have subscribed to it. Recently a most important conference took place between the representatives of the various interests of the hospital and the Ontario Government. At this conference it was decided that a new Act of incorporation and constitution should be promoted at the next session of the Ontario legislature. This Bill will provide for a board of directors to the number of 25, eight of whom will be appointed by the Ontario Government, five by the University of Toronto, five by the city of Toronto, and seven by the benefactors. The present board, which consists of five members, will be dispensed with. Benefactors shall be those who, prior to the passage of the said Act, have contributed \$500 to the hospital, or after the passage thereof \$1000. The Act of incorporation will further provide that the wards shall be open to the students of the University of Toronto for educational purposes alone and that any patient who pays for his maintenance shall have the choice of his own physician, which latter will be subject to the rules and regulations of the trustees. A site will be shortly chosen which it is believed will be near the present medical building of the University of Toronto, and as soon as located it is understood that the erection of a modern outdoor department will be commenced.

Notre Dame Hospital, Montreal.

The annual meeting of the board of governors of the Notre Dame Hospital, Montreal, was held in that city recently. During the past hospital year the number of patients treated in the wards amounted to 2230, an increase of four over the previous year. Each patient cost the hospital \$1.13 per day. Of the number treated 1303 were men and 927 were women. 1871 left the hospital cured or better, 183 were incurable, and 165 died in the hospital. Of the latter number 53 were taken to the hospital in a dying condition. In the different outdoor departments there were 20,991 consultations, divided as follows: surgery, 6585; medicine, 5001; diseases of the eyes, 3412; children's diseases, 1574; skin diseases, 1072; nervous diseases, 807; women's diseases, 790; and teeth troubles, 193; while 1557 urgent cases were treated by the resident medical officers. The financial report for the year showed a deficit of \$229.49. The receipts during the year amounted to \$41,374.44 and the expenditure to \$41,603.93.

Jan. 30th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Sanitary Commission for Singapore.

In consequence of the high mortality and insanitary condition of Singapore a commission has been appointed by the Straits Government. It appears that the health officers

Government Grant to Institutions for the Protection of Infants against Tuberculosis.

On Jan. 24th the Chamber of Deputies voted the sum of 50,000 francs for the use of the institutions organised for the preservation of children from tuberculosis on the grounds that they were establishments of public utility. It is to Professor Granchet that the idea is due of boarding out in the country children who are exposed to the contagion of tuberculosis while they are still healthy. This was stated in the Chamber and it was also remarked that the provision of a sum of 50,000 francs was merely nibbling at the question and that if there were proper anxiety shown for the health of the nation in future years constantly increasing sums would have to be voted.

Tuberculosis and Disinfection.

A case bearing on the above question came up before the Sixth Chamber of the Tribunal recently. A traveller died from laryngeal tuberculosis in a Paris hotel. The proprietor demanded that the executors should disinfect his hotel but the executors refused, saying that tuberculosis did not come into the category of contagious maladies which had to be notified and therefore that the disinfection of a place where a person had died from tuberculosis was optional. The Tribunal, however, did not agree and the executors had to pay the expenses of disinfection which amounted to 150 francs.

Grave Symptoms after taking Antipyrin.

At the meeting of the Medico-Chirurgical Society held on Jan. 8th M. Druelle gave an account of the case of a girl, aged 18 years, who was being treated in the Saint Louis Hospital for a slight attack of psoriasis. One day she complained of a bad headache and she was given a cachet containing one gramme of antipyrin. Within 20 seconds she complained of prickings in her hands, her feet, and her mouth. Then her fingers and ankles became oedematous, while oedematous patches appeared on her eyelids and her lips. She complained of tickling in the throat, her respiration became gradually more and more embarrassed until she hardly breathed at all, and her pulse became imperceptible. She also had oedema of the glottis. Injections of ether were given and artificial respiration was resorted to. Gradually her respiration became normal and with its return the other symptoms disappeared. The extreme suddenness with which the alarming symptoms appeared made M. Lelu say that he thought it possible that the antipyrin was absorbed directly by the mucous membrane of the respiratory tract. M. Richard stated that he had seen a similar train of symptoms follow the administration of acetanilide. He considered that they were due to a direct toxic effect upon the blood corpuscles. Bicarbonate of sodium administered with antipyrin or acetanilide would prevent the complications in question.

Tuberculosis and the Postal Staff.

The committee appointed to study the above question has been holding meetings under the presidency of M. Seligmann-Lux, inspector-general of the department. A resolution was adopted that measures should be taken to obtain from Parliament a grant of 1,200,000 francs, so that postal, telegraph, or telephone employes suffering from incurable tuberculosis may be discharged from the service as being a source of danger to the rest of the staff or to the public. In a future sitting the committee will consider schemes for raising funds by voluntary subscriptions, lotteries, or other methods for the treatment of those in an early stage of tuberculosis by sending them to sanatoriums.

Feb. 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Emoluments of Medical Practice in Berlin.

At a recent meeting of the Berlin Medical Chamber the treasurer presented a report on the incomes of the medical practitioners residing in Berlin and in the province of Brandenburg. The report arranged the practitioners in several classes according to their financial position, the number in each class and their incomes being as follows: 144, no taxable income; 999, income from 900 to 3000 marks (£45 to £150); 1635, income from 3000 to 5000 marks (£150 to £250); 1401, income from 5000 to 12,500 marks

(£250 to £625); 495, income from 12,500 to 30,500 marks (£625 to £1525); 156, income from 30,500 to 60,000 marks (£1525 to £3000); 16, income from 60,000 to 120,000 marks (£3000 to £6000); 6, income from 160,000 to 180,000 marks (£8000 to £9000); and 3, an income of 250,000, 310,000, and 330,000 marks (£13,000, £15,500, and £16,500) respectively. The incomes have increased 6.8 per cent. as compared with the previous year. The number of medical men having either no income or a very small one is rather considerable, but this may be explained by the fact that the report includes medical men who have just settled in practice as well as those who are acting as assistants at hospitals and other institutions with a very small salary. It will also be observed that the number of medical men in the possession of a really large income is insignificant. Considering that in Berlin there are surgeons, consultants, and so on, of the highest renown to whom patients come from every part of the world it might be expected that these gentlemen would derive much greater emoluments from their practice than they actually do. The cause is perhaps that medical fees not only for the average practitioner but also for the consultant are much lower in Germany than in other countries, especially in France and in England. Residents in Berlin who have had to receive medical or surgical treatment during visits to foreign countries have been known to express surprise at the high fees which they were required to pay. Although there are scarcely any trustworthy statistics as to the incomes of consultants and surgeons in Paris and London their receipts are certainly much higher than those of the same class of medical men in Berlin.

The late Professor Rosenstein.

The announcement has appeared of the death of Dr. Samuel Rosenstein, professor of clinical medicine at the University of Leyden in Holland. Although he had lived out of Germany for 40 years he was a German by birth and must be regarded as one of the leading German clinical teachers, his principal works being written in the German language. Professor Rosenstein was born in 1832 in Berlin. He first studied philosophy and afterwards medicine at the University of Berlin where he took his medical degree in 1855. He then proceeded to Dantzic where he was appointed assistant physician at the municipal hospital, but in 1858 he returned to Berlin, where he worked under Professor Virchow and Professor Traube. In 1863 he was recognised as *privat-docent* in Berlin and in 1865 he left his native country to become ordinary professor of medicine at the University of Groningen in Holland. In 1872 he removed to the ancient and celebrated University of Leyden and passed the remainder of his life there, being highly appreciated in his native country as well as in Holland, where he had a large practice and acted as consulting physician to the Royal Family of Holland. Being in touch with both German and Dutch scientific life he has done a great deal to encourage mutual good feeling between the medical men of the two countries. His principal work was in connexion with the diseases of the kidneys and his handbook on this subject has for a long time been a standard work in German medical literature. He also carried out investigations on the diseases of the liver, on diabetes, and on endocarditis.

A Medical Peer.

Professor von Bergmann, the celebrated surgeon of the University of Berlin, who has just received a peerage, is the only medical peer of Royal creation, as Professor Küster, the other medical member of the Prussian Herrenhaus (House of Lords), sits in the House as representative of, and sent by, the University of Marburg. In the Prussian Lower House and in the Imperial German Parliament likewise there is a considerable number of medical members who take an active part in the proceedings, especially in connexion with questions of public hygiene.

Statistics of the German Universities.

The number of students at the German universities is not less than 42,390 in the present winter, as compared with 39,716 in the previous year and 29,117 in 1895. The increase in the number of students at four of the larger universities has been as follows during the last ten years: Berlin, from 5345 to 8031 students; Munich, from 2865 to 5147; Leipzig, from 3238 to 4224; and Bonn, from 1070 to 2903. The other universities also show a considerable increase with the exception of that of Würzburg, where 1368 students were

very regular borrower from the infirmity library. He was providentially spared a long illness and died full of years and universally respected. The interment took place at St. Andrew's Cemetery on Jan. 30th and at the service the chosen hymn, "Now the labourer's task is o'er," seemed particularly appropriate.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Josef Vassilovitch Kostenitch, professor in the Clinical Institute of the Grand Duchess Elen Pavlovna. His special study was embryology and histology but he was also an ophthalmologist and since 1903 had been director and chief physician in the St. Petersburg Eye Hospital.—Dr. Peter Jacobs, the senior member of the medical profession in Cologne, at the age of 98 years.—Dr. Domenico Chiara, formerly professor of midwifery in Florence.—Dr. De Vilto W. Harrington, professor of urinary diseases in the University of Buffalo.—Dr. Rosanelli, formerly extraordinary professor of general pathology in Padua.—Dr. Ranney, professor of neurology in the University of Vermont.—Dr. Ercole Pasquali, professor of midwifery in Rome, at the age of 80 years.—Dr. Emil von Wolfring, formerly professor of ophthalmology in the University of Warsaw.—Dr. André Thouvenet, professor of physiology in Limoges.

Medical News.

UNIVERSITY OF OXFORD.—The following medical degree was conferred in a congregation held on Jan. 27th:—*Bachelor of Medicine and Surgery.*—H. D. Davis, B.A., Balliol College.

UNIVERSITY OF CAMBRIDGE.—At the congregation on Jan. 30th the following degrees were conferred:—

M.D.—C. D. Henry, St. John's.
M.B. and B.C.—S. Gooding, St. John's; and M. A. Cassidy, Clare.
B.C.—J. Michel Smith.

GERMAN CONGRESS OF ORTHOPÆDIC SURGERY.—The Fifth Congress of the German Society for Orthopædic Surgery will be held in Langenbeck House, Ziegelstrasse, Berlin, on April 3rd, the day before the assembling of the German Surgical Congress, which will meet in the same building, as was announced in THE LANCET of Feb. 3rd, p. 316. Professor Adolf Lorenz of Vienna will preside, the proceedings will commence at 9 A.M., and in the afternoon the general meeting will be held, at which the question of raising the members' subscription to 20 marks will be considered. Papers and other communications should be notified as soon as possible—by March 1st at the latest—to Professor Joachimsthal (Berlin W., Magdeburger Strasse, 36). Patients arriving from abroad may be accommodated in the Royal Surgical Clinic of his Excellency Geheimrat Professor von Bergmann (Ziegelstrasse 5/9). Applications from intending members should be sent to Professor Joachimsthal, accompanied by introductions from three members of the society.

CARDIFF INFIRMARY.—During the past five years nearly £20,000 have been expended upon the Cardiff Infirmary in the endeavour to make it one of the best equipped of modern hospitals. It has, however, been apparent to those who take an interest in the institution that at no very distant date additions will have to be made in order to increase the existing accommodation for in-patients. At present only 178 patients can be received in the wards at one time and the necessity for enlargement is shown from the fact that early in this year there were no fewer than 336 patients awaiting admission. The existing buildings are not at all crowded on the site and there is enough vacant space to provide further accommodation for 100 patients. New accident wards and out-patient dressing rooms were opened by Sir John Williams in 1903 and it is now proposed to rearrange the out-patient department, providing at the same time much needed accommodation for 14 additional nurses. The cost of this scheme is estimated at £7000, towards which sum an anonymous donor has offered £1000 provided the remaining £6000 are promised during the present year.

THE GENERAL ELECTION.—Dr W. R. Smith has been unsuccessful in the contest for the Parliamentary representation of the Universities of Glasgow and Aberdeen but Sir John Batty Tuke's re-election for the Universities of Edinburgh and St. Andrews seems to be assured.

DONATIONS AND BEQUESTS.—Sir E. P. Wills, Bart., has given £1500 for the endowment of a bed at the Bristol General Hospital.—The late Mr. A. C. Pass has bequeathed £1000 to the Bristol General Hospital and a further sum of £2000 if his son should attain the age of 21 years; £500 to University College, Bristol; £200 to the West of England Sanatorium, Weston-super-Mare; and £100 each to the Bristol Eye Hospital, to the Weymouth and Dorset County Royal Eye Infirmary, and the Princess Christian Sanatorium, Weymouth.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board, under the provisions of the rules of procedure on the proposed removal of a name from the Roll of Midwives, was held on Jan. 30th at 6, Suffolk-street, Pall Mall, London, Dr. F. H. Champneys being in the chair. The following charges alleged against a certified midwife, Eliza Pugh, were heard:—

That being in attendance on the confinement of a woman on Oct. 12th, 1905, she was guilty of negligence and misconduct in the following respects: (a) The perineum being ruptured she did not decline to attend alone or advise that a registered medical practitioner should be sent for, as required by Rule E. 17. (b) On the occurrence of a rigor on Oct. 15th she did not decline to attend alone or advise that a registered medical practitioner should be sent for, as required by Rule E. 17. (c) On the arrival of Dr. T. H. Scott on Oct. 17th she stated, in reply to a question by him, that the patient was not torn or injured, well knowing that the perineum was ruptured and that an attempt had been made by an unqualified person to stitch it up. That she was habitually uncleanly in person and did not obey the requirements of Rule E. 1. That when called to a confinement she did not take with her the appliances required by Rule E. 2.

The Board directed that the name of this midwife should be removed from the roll. The hearing of the following charges alleged against a certified midwife, Jane Tween, was then proceeded with:—

That being in attendance on the confinement of a woman on Sept. 15th, 1905, and subsequent days, she was guilty of negligence and misconduct in the following respects: (a) The placenta not having been expelled within an hour after the birth she did not decline to attend alone or advise that a registered medical practitioner should be sent for, as required by Rule E. 17. (b) Both mother and child being ill she did not decline to attend alone or advise that a registered medical practitioner should be sent for, as required by Rule E. 17. (c) On the arrival of Dr. F. Perhouse on Sept. 22nd she did not faithfully carry out his instructions, as required by Rule E. 6, but declined to attend the patient, or to administer a vaginal douche as ordered by him. (d) Being ordered by Dr. F. Perhouse to administer vaginal douches on Sept. 23rd and 24th she purported to comply with these orders by injecting the lotion per rectum. (e) She did not give directions for securing the comfort and proper drying of the child, as required by Rule E. 11, but fed it on oatmeal and gin, thereby conducing to its death on Sept. 24th. That she was habitually uncleanly in person and did not wear a dress of washable material as required by Rule E. 1. That when called to a confinement she did not take with her the appliances and antiseptics required by Rule E. 2. That she did not keep a register of cases as required by Rule E. 19.

The Board directed that the name of Jane Tween should be removed from the roll. The following charges alleged against a certified midwife, Elizabeth Jacklin, were then heard:—

That she was a person of intemperate habits, and in particular she was intoxicated at 5 P.M. on August 2nd, 1905, in her own house. That she was under the influence of drink on June 23rd, 1905, at the office of the medical officer of health. That she was habitually uncleanly in person, and did not wear a dress of washable material, as required by Rule E. 1. That when called to a confinement she did not take with her the appliances required by Rule E. 2. That she did not keep a register of cases, as required by Rule E. 19.

The Board directed that the name of Elizabeth Jacklin should be removed from the roll. The charges alleged against a certified midwife, Esther Smith, were then heard:—

That she was habitually uncleanly in person and did not wear a dress of washable material as required by Rule E. 1. That when called to a confinement she did not take with her the appliances or antiseptics required by Rule E. 2. That she did not disinfect her hands and forearms previous to touching the genital organs or their neighbourhood, as required by Rule E. 3. That she did not before making the first internal examination wash the patient's external parts with soap and water and then wash them with an antiseptic solution, as required by Rule E. 7. That she did not keep a register of cases, as required by Rule E. 19.

The Board directed that the name of Esther Smith should

of several cities have been asked to join the commission, but while Calcutta has agreed to part with its health officer the Bombay corporation has refused to do so.

Conditions bordering on Famine.

The want of rain is severely felt in some parts of India and famine is only averted by timely relief. In Rajputana 68,000 persons are receiving assistance, in Bombay 5000, and in the United Provinces 387,000. Test works in Muttra, Jhansi, Hamirpur, and Cawnpore attract workers. The cattle are suffering severely in the affected districts.

The Plague Epidemic.

The plague statistics show an increase of the disease, though the annual recrudescence is much behind time. The United Provinces return 1184 deaths, Bengal 1073, Bombay 802, Punjab 563, Central Provinces 228, Mysore 139, Burma 114, Kashmir 55, Hyderabad 47, Madras 43, and Rajputana 30. There has been an outbreak in Madras city from a few suspicious cases about Christmas. All the cases, about 20, have been reported from the neighbourhood of the emigration depôts in the northern suburb—the same area which gave rise to the scare previously.

The Septic Tanks on the Hooghly.

The septic tank question about which such an outcry was made last year has been partially settled. It will be remembered that several of the mills on the river Hooghly above Calcutta had established these tanks in connexion with their latrines and that the effluents were discharged into the river. The complaints were almost entirely sentimental but a committee of inquiry was appointed. A Government resolution has now been issued. It admits that the amount of pollution is very much less than was previously indicated and the lieutenant-governor accepted the conclusions of the committee that if the installations are constructed and worked in accordance with its recommendations, and if the effluent is further suitably treated with chlorinated lime in the manner laid down by the sanitary commissioner, the resulting discharge will be free from objection both from a chemical and from a bacteriological point of view. It is now ordered that if the conditions be complied with there will no longer exist any sanitary ground for opposing the construction of new installations or the continuance of those already established. Unfortunately, a want of confidence in its own advisers and their capacity to conduct experiments and to draw deductions from them is shown in the appointment by the Government of Bengal of an expert from England. The committee which conducted the experiments and made the recommendations which have been accepted was composed of sanitary specialists. Outside assistance in this matter is wholly uncalled for and is a slur on the capacity of the high officers engaged in these inquiries.

Jan. 19th.

Obituary.

GEORGE WELLER, M.R.C.S. ENG., L.S.A.

George Weller, the youngest son of the late Captain J. Weller, shipowner, of Bow-road, E., was born in the year 1841. He was educated at the Stepney Grammar School and was afterwards apprenticed to the late Mr. Thomas Jones of Chesterfield. Mr. Jones had a large general practice, with charge of collieries, he was also the union medical officer and held various parochial districts attached to the union, so that under his careful instruction Mr. Weller gained much useful information and was well grounded in the routine work of a general practice. He joined the London Hospital as a student in 1860 and after passing the Royal College of Surgeons of England in 1863 and the Society of Apothecaries of London in 1865 was appointed house surgeon to the hospital. Subsequently he became resident apothecary and assistant medical officer. His devotion to the arduous duties of these appointments injured his health, and although pressure was put on him to leave the hospital and to go for a voyage it was with some difficulty that he was induced to do so. He finally yielded, however, and went to Australia. Returning in 1866 with his health re-established he commenced practice in Wanstead, Essex. Here, in addition to the routine of general practice, he held various appointments, was medical officer to the Merchant Seamen's Orphan Asylum, surgeon to the "N" and "K" divisions of the Metropolitan Police, medical officer to

the Wanstead Maternity Society and Provident Dispensary, and for a time a member of the local board of health. He retired from the active work of general practice after 22 years and commenced consulting work in West-street, Finsbury, but 12 months afterwards began to suffer from symptoms of empyema of the frontal sinuses for which he underwent operation on two or three occasions. He then retired to Willesden, hoping still to do some useful work, but was again obliged to give up owing to the formation of a renal calculus which was removed in July, 1900. He then relinquished practice and finally removed to South Croydon, where he died on Jan. 25th after a long and distressing illness borne with much courage. During the last few years of his life he travelled a good deal, going to the South of France, Algiers, Egypt, South Africa, the Canaries, and other places, and there is no doubt that his health was much better when he was in a warmer climate.

George Weller was a good example of the advantages of the apprenticeship system of medical training and always acknowledged the value of his experiences as a youth in the large Chesterfield practice. His practical knowledge and devotion to duty received recognition in Wanstead and the surrounding district, where he soon established an extensive practice. No one who knew him could doubt the honesty of purpose and upright character of the man, and any suspicion of unfair dealing or story of oppression called forth an expression of indignation on his part which was very emphatic. His numerous illnesses produced a serious effect on his career and interfered very much with his success as a consultant, leading ultimately to his retirement, but he never lost the confidence and friendship of some of his patients who relied on him for help to the end. George Weller was never married but leaves a brother and sisters to mourn their loss. The interment took place quietly in the family vault in the Tower Hamlet Cemetery on Jan. 31st in the presence of several relatives and old friends.

JOSEPH FRAIN, M.D. ST. AND., L.R.C.P. EDIN., M.R.C.S. ENG., L.S.A.

By the death of Dr. Joseph Frain at the advanced age of 84 years Tyneside has lost one of its oldest and most respected practitioners. Dr. Frain was for many years in practice in Frederick-street, South Shields, of which town he was a well-known and highly respected resident. Though so well known as a practitioner of medicine and much sought after for his skill he was particularly identified with the public affairs of the seaside borough and every philanthropic or educational enterprise had his earnest support. In the old days before the advent of free libraries he did much to foster the Mechanics' Institute in which he took a great interest. When the first school board was formed in South Shields in 1871 he was elected a member, and six years later served as chairman for a period of three years. For many years he was also a guardian of the poor, a position from which he retired in 1887. His professional education was received at the Medical School of Newcastle-upon-Tyne, in Edinburgh, and in London. So long ago as 1845 he took the "College and Hall" and 17 years later the M.D. of St. Andrews. In the Ingham Infirmary he took a great interest and at the time of his death was one of the honorary consulting surgeons, a position he also held in connexion with the South Shields and Westoe Dispensary. For many years he was a member of the old Pathological Society and also of the present Northumberland and Durham Medical Society and was a frequent attendant at the meetings. About 15 years ago he retired from practice in South Shields, where he was succeeded by his son-in-law, Mr. C. Pope, who predeceased him, and went to live in Newcastle. His interest in medical affairs was unabated almost to the end, and so recently as December last he was present at the lecture on Aphasia by Dr. Byrom Bramwell. Long after his retirement he was very frequently to be seen in the operating theatre of the Newcastle Infirmary, perhaps watching the operations of a surgeon whom he had himself assisted into the world. His patriarchal appearance, combined almost with the keenness of youth, never failed to direct attention to his tall straight figure. Always a great reader, he spent much of his leisure in this way and was a

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

- ADAM, R. G., M.B., L.R.C.P. Edin., has been appointed House Physician at the North Eastern Hospital for Children, Hackney road, Bethnal Green, E.
- BARWELL, HAROLD M.B. Lond. F.R.C.S. Eng., has been appointed Surgeon for Diseases of the Throat at St. George's Hospital.
- BLACKWOOD, WILLIAM M.B., Ch.B. Edin., has been appointed Honorary Surgeon to the Camborne (Cornwall) Division of the St. John Ambulance Association.
- BRODIE, DESBOROUGH, M.B. B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer of the Tetbury (Gloucestershire) Union.
- COOKE, ALFRED S., M.R.C.S. Eng., L.S.A., has been appointed Consulting Surgeon to the Stroud General Hospital.
- DODDS, H. B., M.D. Edin., has been appointed Assistant Resident Medical Officer at the Royal National Hospital, Ventnor, Isle of Wight.
- FREEMAN, W. T., M.D. Durh., F.R.C.S. Eng., has been appointed Medical Officer to the Reading Prison.
- GRANDAGE, W. B. M.R.C.S. has been appointed Resident House Surgeon at the Victoria Hospital for Children, Chelsea.
- GRANT, W. GORDON M.D. Abern., has been appointed Honorary Gynaecologist to the Hospital Johannesburg Transvaal.
- GRIFFITHS, E. R. M.R.C.S., L.R.C.P. Lond., has been appointed Senior Assistant Medical Officer at the Lewisham Infirmary.
- HEPYWORTH, F. ARTHUR, M.B., B.C. Cantab., has been appointed House Surgeon at the Derbyshire Royal Infirmary.
- LEAPINGWELL, ARTHUR E. M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at the Derbyshire Royal Infirmary.
- MAGILLVRAE, W. J. HOOKER, L.R.C.P., L.R.C.S., L.M. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Royal Rusholme and District Provident Dispensary, Manchester.
- MCMILLAN, JOSEPH JAMES, L.R.C.S. & P.Irel., has been appointed Medical Officer of Rosgullil Dispensary District, Carrigart co. Donegal.
- NEWMAN, ERNEST L., M.B. Syd., has been appointed House Surgeon at the North Eastern Hospital for Children Hackney road, Bethnal Green E.
- PEARSE, T. F., M.D., F.R.C.S. Eng., M.R.C.P. Lond., D.P.H. Camb., has been appointed Examiner in Hygiene at the University of Calcutta.
- PETERKIN, G., M.D. Edin., D.P.H. has been appointed Certifying Surgeon under the Factory and Workshop Act for the Forfar District of the county of Forfar.
- RAVES, LESLIE, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the North Eastern Hospital for Children, Hackney road, Bethnal Green, E.
- ROBERTS, ADELIVE MARY M.D. B.S. Lond. has been appointed Medical Registrar to the Royal Free Hospital, London.
- ROBERTS, E. J., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Derbyshire Royal Infirmary.
- TRYNER, J. A. M.B., D.P.H. Camb., has been reappointed Executive Health Officer, Municipality of Bombay, for five years from Feb 1st, 1905.
- WILKINSON, T. J. T., M.B. Ch.B. B.A.O. Dub., has been appointed House Surgeon at the Derbyshire Royal Infirmary.
- WILSON, HAROLD W. F.R.C.S. Eng. has been elected to the Luther Holden Research Scholarship at St. Bartholomew's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

- BLACKBURN AND EAST LANCASHIRE INFIRMARY—Junior House Surgeon. Salary £70 per annum with board, washing, &c.
- BURY INFIRMARY—Senior House Surgeon Salary £110, with board, residence, and attendance.
- CANOVER HOSPITAL, Fulham road, London, S.W.—Senior House Surgeon for six months Salary £20 per annum, with board and residence.
- CANTERBURY, KENT AND CANTERBURY HOSPITAL—House Physician, also House Surgeon, both unmarried. Salary in each case £90 a year, with board and lodging.
- CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two Physicians to Out patients.
- DEARBORN, DERBYSHIRE INFIRMARY—House Surgeon. Salary £100, with board, residence, and washing.
- DURHAM COUNTY COUNCIL—Inspector of Midwives and Health Visitor (female). Salary £120 per annum, rising to £150, with travelling expenses.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—Assistant Surgeon.

HULL ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £9 guineas per annum, with board and apartments.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTON DISPENSARY—Assistant House Surgeon. Salary £75, with residence, board and washing.

LARBERT, STIRLING DISTRICT ASYLUM—Senior Assistant Medical Officer. Salary £150, with board.

LEICESTER INFIRMARY—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

LINCOLN COUNTY HOSPITAL—Senior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

LONDON COUNTY ASYLUMS Banstead, Surrey, and Colney Hatch New Southgate. A—Junior Assistant Medical Officer at each Asylum. Salary £150 per annum, with board, apartments and washing.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST—Honorary Surgeon.

MANCHESTER ST. MARY'S HOSPITAL, Clifford-street—House Surgeon. Salary £70 per annum.

METROPOLITAN HOSPITAL, Kingsland road, N.E.—Assistant Physician NEWCASTLE ON TYNE DISPENSARY—Two Visiting Medical Assistants. Salary £160, rising to £180 per annum.

NEW HOSPITAL FOR WOMEN, Euston road.—House Surgeon. Also Non resident House Surgeon.

NEW ZEALAND GOVERNMENT MENTAL HOSPITALS.—Assistant Medical Officer, unmarried. Salary £250, with board, lodging, and washing.

PETERBOROUGH INFIRMARY AND DISPENSARY—Surgeon, Assistant Physician, and Assistant Surgeon.

RICHMOND, SURREY, ROYAL HOSPITAL—Assistant House Surgeon. Salary £70 per annum, with board and apartments.

ROTHERHAM HOSPITAL AND DISPENSARY—Assistant House Surgeon. Salary at rate of £80 per annum, with board, lodging and washing.

ROYAL TREE HOSPITAL, Gray's Inn road, W.C.—Anaesthetist and Curator of Museum (female).

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SOUTHAMPTON, ROYAL SOUTH HAMPS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary £80 per annum, with rooms, board, and washing.

TORBAY HOSPITAL, Torquay—House Surgeon. Salary £100 per annum with residence, board, and washing.

WINCHESTER, CITY OF—Medical Officer of Health. Salary £300 per annum.

WINCHESTER, ROYAL HAMPS COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, rising to £70, with board, residence, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at East Holey, in the County of Berks, and at Sherston, in the County of Wilts.

Births, Marriages, and Deaths.

BIRTHS

- DOVE.—On Feb 3rd at Gothic Lodge, Leatherhead, the wife of W. B. Dove, M.A., M.B., B.C. Cantab., of a son.
- HODGSON.—On Feb 3rd at The Crescent, Salford, Lancs. the wife of Stanley Hodgson, M.D., B.S. Lond., M.R.C.S., of a son.
- JONES.—On Feb 5th, 1905, at Whitby, the wife of Arthur R. Jones, M.R.C.S., L.R.C.P., of a son.
- STEVENS.—On Feb 1st, at Riverston, Ryde the wife of Major C. R. Stevens I.M.S. of a daughter.
- THRYL.—On Feb 1st, at Tudor House, Barnet, Herts the wife of William Thryl, V.A. M.D. of a son.
- TURNER.—On Feb 4th, at 17, Harley street, W. the wife of William Turner, M.S., F.R.C.S., of a son.
- WALKER.—On Feb 4th at Westgate, Peterborough, the wife of R. Alec. Walker, M.B., F.R.C.S. of a daughter.

MARRIAGE

- BOYER—SCHIELE.—On Nov 18th 1903, at Holy Trinity Church, Lomas de Zamora, Argentine Republic, Louis Joseph Boyer to Olga Alberta Schiele, M.B. B.S. Dun., younger daughter of Edward C. Schiele, Esq., Estancia Fortin Las Tunas Cordoba.

DEATHS.

- BLAKE.—On Jan. 31st, at Hillside, Dulciburst Hill, Edwin Henry Blake, surgeon, formerly of Dacre Lodge, Plasnet road, Lupton E.
- STEWART.—At 2, Morningdale Park, Edinburgh on Feb 1st Allan Cuthbertson Stewart M.D., fourth son of the late William Stewart, Esq.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

be removed from the roll. The following charges alleged against a certified midwife, Mary Ann George, were then heard :—

That on Jan. 27th, 1905, she was charged with felony at the City of Worcester police court and having pleaded guilty was convicted thereof. That on Oct. 27th, 1905, she was charged at the City of Worcester police court with having failed to notify the fact of her intention to practise to the local supervising authority in accordance with Section 10 of the Midwives Act, 1902, and being convicted thereof was fined £1. That when called to a confinement she did not take with her the appliances or antiseptics required by Rule E. 2. That she did not keep a register of cases, as required by Rule E. 19.

The Board directed that the name of Mary Ann George should be removed from the roll and also gave instructions that the papers in this case should be sent to the Public Prosecutor for his consideration of the facts concerning the signing of a certificate of good character of this midwife by a clergyman. The following charges alleged against a certified midwife, Sarah Howe, were heard :—

That she was uncleanly in person, and did not wear a dress of washable material, as required by Rule E. 1. That when called to a confinement she did not take with her the appliances or antiseptics required by Rule E. 2. That she did not keep a register of cases as required by Rule E. 19.

The Board decided in this case that Sarah Howe was to be severely censured and cautioned as to her future conduct.

SANITARY INSPECTORS' ASSOCIATION.—The twenty-third annual dinner of the Sanitary Inspectors' Association was held at the Holborn Restaurant on Feb. 3rd, under the presidency of Sir James Orichton-Browne. Among those present were Sir William H. Broadbent, Sir Wyke Bayliss, Dr. J. C. Thresh, Dr. J. M. Rhodes, Sir Shirley F. Murphy, Dr. L. T. F. Bryett, Mr. Andrew Clark, Mr. G. Elliston, and Mr. W. W. West, chairman of the council of the Sanitary Inspectors' Association. Many of the mayors of the metropolitan boroughs were also present. The toast of "The King" having been duly honoured Sir William Broadbent gave the toast of "Science and Art," to which Sir Wyke Bayliss responded for art, remarking that art and sanitation, although very different from each other, were not far apart. Art was the science of beauty and sanitation was the science of health; beauty and health were the same thing. Dr. Thresh replied on behalf of science. The President, proposing the toast of "The Sanitary Inspectors' Association," said that the beneficence of the work of sanitary inspectors was now generally recognised. There was a growing appreciation in the public mind of the value of their services, an appreciation which must take shape some time in the granting to sanitary inspectors that security of tenure which was requisite to enable them to do their work without fear or favour, in the provision of adequate means of education, training, and official certification for those who were desirous of entering their ranks, and in the granting of pensions. It was satisfactory to note that there was a steady, intelligent, and sustained interest in sanitary matters throughout the land. He pleaded for a thoroughly efficient sanitary police, well armed, invested with full authority, and working under a Minister of Public Health with a seat in the Cabinet. What they had to do was to convince the public of the power and potency of sanitation and of its pecuniary advantages, and they had, he thought, an opportunity of pressing that lesson home on the public in connexion with pulmonary consumption.

LITERARY INTELLIGENCE.—The first number of *La Bulgarie Médicale*, which is edited by Dr. Chr. Doctoroff, director of the Sofia Institute for combating Infectious Diseases, has recently appeared. In a note at the commencement it is remarked that it is quite a mistake to suppose that because there is no medical faculty in the University the medical literature of Bulgaria must be valueless. All the 700 medical practitioners distributed throughout the country have been educated at foreign universities and are quite able to make full use of the invaluable clinical material to which their practice introduces them. Owing, however, partly to the fact that the Bulgarian language is almost unknown abroad and partly to the difficulty of obtaining facilities for publishing medical works, Bulgarian medical literature has never taken the place to which it may fairly aspire. The two chief medical journals are *Letopisnik Lekarskia sâiousa v Bâlgaria* (The Annals of the Bulgarian Medical Union) and *Bâlgarski Lekar* (The Bulgarian Doctor). There are also an official publication dealing mainly with sanitary statistics and regulations and a military medical journal

which has only lately made its appearance. All of these are in the vernacular, and *La Bulgarie Médicale* promises abstracts of the more important scientific articles in French. The present number gives one of a paper by Dr. Dragomiroff, physician to the Philippopolis Hospital, on an epidemic of cerebro-spinal meningitis occurring in 1903. The author met with 131 cases, the mortality of which was 53·5 per cent. He does not believe in the contagious nature of the affection because though the cases were scattered about in different wards none of the other patients or nurses contracted the disease. He employed lumbar puncture in 21 cases, 13 of which proved fatal.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Nouveau Traité de Médecine et de Thérapeutique. Publié en Fascicules sous la direction de MM. P. Brouardel et A. Gilbert. XV. Maladies de la Bouche, du Pharynx, et de l'Œsophage. Par G. Roque, Professeur Agrégé à la Faculté de Médecine de Lyon. Médecin des Hôpitaux, et L. Gaillard, Médecin de l'Hôpital Lariboisière. Price Fr.5.

Formulaires des Médicaments Nouveaux. Pour 1906. Par H. Bocquillon-Limousin, Docteur en Pharmacie, Pharmacien de 1re Classe, Lauréat, médaillé d'or de l'Ecole de Pharmacie. Avec une Introduction par Henri Richard, Membre de l'Académie de Médecine, Médecin de l'Hôpital Necker. Price Fr.3.

BELL, GEORGE, AND SONS, York House, Portugal-street, W.C.

The Universal Kinship. By J. Howard Moore, Instructor in Zoology, Crane Manual Training High School, Chicago. Price 4s. 6d. net.

BLACK, ADAM AND CHARLES, Solho-square, W.

The Writers' and Artists' Year-book, 1906. A Directory for Writers, Artists, and Photographers. Price 1s. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. H. P. Hawkins and Mr. W. H. Battle. Vol. XXXIII. Price 2s. 6d. net.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Bibliothek v. Coler. Herausgegeben von O. Schjerning. Band 23. Die Blinddarmentzündung (Perityphlitis) in der Armee von 1880-1900. Von Dr. Stricker, Generalarzt und Korpsarzt des Gardekorps. Price M.4.

PITMAN, SIR ISAAC AND SONS, LIMITED, 1, Amen Corner, E.C.

Home Gymnastics for Young and Old. By T. J. Hartelius, M.D., Principal Lecturer at the Royal Gymnastic Central Institute, Stockholm. Translated and adapted from the Swedish by C. Löfving. Fifth edition, revised. With a Prefatory Note. By Arthur A. Deale, M.B. Price 1s. 6d.

REBMAN, Limited, 129, Shaftesbury-avenue, W.C.

A Manual and Atlas of Orthopaedic Surgery, including the History, Etiology, Pathology, Treatment of Deformities in Orthopaedic Surgery, Orthopaedic Surgery, of Orthopaedic Surgery. Women's Medical College of Pennsylvania. Price £2 12s. 6d. net.

RUDEVAL, F. R. de, 4, Rue Antoine Dubois (Vie), Paris.

L'Injection Trachéale Simplifiée. Son Emploi dans le Traitement des Affections Respiratoires et notamment de la Tuberculose Pulmonaire. Par le Dr. Henri Mendel, Ancien Interne des Hôpitaux de Paris. Price Fr. 1.50.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Physiologie und Pathologie des Mineralstoffwechsels, nebst Tabellen über die Mineralstoffzusammensetzung der menschlichen Nahrungs- und Genussmittel sowie der Mineralbrunnen und -Bäder. Von Dr. Albert Albu, Privatdozent für innere Medizin an der Universität zu Berlin und Dr. Carl Nernberg, Privatdozent u. chemischer Assistent am Pathologischen Institut der Universität Berlin. Price M.7.

SWAN SONNENSCHNEIN AND CO., LIMITED, 25, High-street, Bloomsbury, W.C.

The Cambridge Year-Book and Directory, 1906. Price 6s. net.
The Oxford Year-Book and Directory. Price 6s. net.
The Schoolmasters' Year-Book and Directory, 1906. Price 6s. net.

TAFFARD, E. 6, Rue Métivier, Bordeaux.

Le Bérubéri. Monographie par le Docteur C. M. E. Dubruel, Médecin-Major de 2me Classe des Troupes Coloniales. Price Fr.4.

VIGOT, FRÈRES, 23, Place de l'Ecole-de-Médecine, Paris.

Thérapeutique Oculaire. De l'Emploi des Alcaloïdes en Solution Iulienne. Par le Docteur Serail, Chef de Clinique d'Ophthalmologie de la Faculté de Paris. Mention honorable (Prix Barbier, 1905), Institut de France (Académie des Sciences). Price Fr.2.60.

WILLIAMS AND NORRATT, 14, Henrietta-street, Covent-garden, W.C.
Transactions of the Epidemiological Society of London. New Series. Vol. XXIV. Session 1904-1905. Price not stated.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Organic Nervous Affections of Children (with cases).

TUESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. W. Carr: Clinique (Medical). 5.15 P.M. Lecture.—Dr. J. M. H. MacLeod: The Treatment of Ringworm.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: X Rays—Diagnosis and Treatment (illustrated by lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture.—Dr. Buzzard: Temporo-sphenoidal Lesions.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Colney Hatch Asylum, New Southgate, N.).—3.30 P.M. Dr. H. Corner: Demonstration on Lunacy Law and Certification.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Prof. W. Surling: Food and Nutrition. (Lecture II.)

WEDNESDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. L. Chas'te: Clinique (Surgical). 5.15 P.M. Lecture.—Dr. H. Campbell: Observations on Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. L. Williams: Caries of the Teeth—its Treatment (1) by Filling; (2) by Extraction of the Teeth.

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture.—Dr. R. Crocker: Varieties of Lichen.

GENERAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration.—Dr. Abercrombie: Nose.

ROYAL SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on Is the Intercepting Trap a Failure (opened by Mr. R. Read and Dr. W. Butler).

THURSDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique (Surgical). 5.15 P.M. Lecture.—Dr. P. Horrocks: The Use of Penicillin.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Edwards: Carcinoma of the Rectum. (Lecture I.)

CHARING CROSS HOSPITAL.—4 P.M. Dr. Murray: Demonstration of Medical Cases. (Post Graduate Course.)

BABYHILL FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture.—Dr. Lockyer: Appendicitis and Pregnancy.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Syphilis: Pustular and Tubercular (Nodular and Gummatous). (Cheslerfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy square, W.).—5 P.M. Lecture.—Dr. H. Barwell: The Treatment of Laryngeal Tuberculosis. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture.—Mr. Corner: The Surgical Conditions which Result from Improper Feeding.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Clinical Lecture.—Dr. R. M. Leslie: Prognosis in Diseases of the Liver and Pancreas.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION (11, Chandos-street, Cavendish square, W.).—3.45 P.M. Discussion on Physical Education in Schools (introduced by Dr. W. P. Herringham and Mr. T. C. Horsfall).

FRIDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. R. Lake: Clinique (Surg.).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. J. Reece: Food and Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture.—Dr. Buzzard: Myelitis.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Mr. W. C. D. Whetham: The Passage of Electricity through Liquids.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

THE LANCET AT THE RAILWAY BOOKSTALLS.

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls, Messrs. W. H. Smith and Son's connexion with them having now terminated.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsgents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

During the week marked copies of the following newspapers have been received: *Essex Advertiser*, *Leamington Spa Courier*, *Yorkshire Post*, *Herefordshire Mercury*, *St. Helena News* and *Advertiser*, *Western Mail* (Cardiff), *Westminster Gazette*, *Dublin Weekly Times*, *Liverpool Post and Mercury*, *Australasian Medical Gazette*, *Surrey Advertiser*, *Literary Digest* (New York), *Scientific American*, *Manchester Chronicle*, *Daily Chronicle*, *Irish Times*, *Morning Leader*, *Daily News*, &c.

Notes, Short Comments, and Answers to Correspondents.

THE APOTHEOSIS OF THE APPENDIX

THE following verses have reached us from Oxford —

A Grecian sage—so as a boy I
Was given to understand—this maxim
Used to repeat, did any ax'im —
“H phōus oudēn mārny polei.”

But what I ask by day, by night, is —
Granting he's right, then what's the end ex-
pressly subversive by my appendix,
Except to cause appendicitis?

My surgeon grimly makes reflection
As I lie here in bed extended —
“What can't be mended, must be ended” —
He meditates my virsektion

Then my appendix, thy true merit
Will not lack monument or blazon:
For thou wilt stand for all to gaze on
Preserved in methylated spirit.

Oxford, Jan. 31st.

A. E. J. R.

SUPEROILIARY GYMNASTICS

To the Editors of THE LANCET

SIRS,—You may like to know of any similar cases to the ones described in your valuable paper. I can raise the left eyebrow and can keep the right one steady or move it down to a frown as I think fit. Until I read the reference to the cases in THE LANCET I have never met or heard of anyone being able to do the same.

Jan 24th, 1906

I am, Sirs, yours faithfully,

H. C.

POISONING BY OLEANDER.

To the Editors of THE LANCET.

SIRS,—Dr F. Lucas Benham will find the details he wants of poisoning by oleander in “The Text-book of Medical Jurisprudence for India” (pp 296-98, 376-78), by I. B. Lyon, F.O.S., F.I.C., Brigade-Surgeon (Bombay Medical Service). The book is published by Messrs. W. Thacker and Co., 87, Newgate-street, London (published 1889).

I am, Sirs, yours faithfully,

Vankar, Jan 18th, 1906

K. A. NARAYAN

UNDESIRE PUBLICITY

To the Editors of THE LANCET

SIRS,—There is inserted in the *Yorkshire Post* of Feb 5th a copy of the notes of my case on the Restoration of the Lower Lip published in THE LANCET of Feb 3rd. May I ask you to accept my assurance that this was done without my knowledge or authority?

I am, Sirs, yours faithfully,

Leeds, Feb 5th, 1906

W. H. BROWN

WE have received from Bovril, Limited, a signed artist's proof of their new presentation plate, “The Home of the Swans” after the picture by Fred Morgan. The picture (which has been finely reproduced by Messrs. O. W. Faulkner and Co.) represents two pretty children, a curly headed girl and boy, feeding swans from a boat propelled by a lady in white.

Alpha.—We think that the attention of the editor might be drawn to the matter.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb 8th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuo.	Max. min. Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb 2	30.12	W	0.01	74	50	42	43	45	Cloudy
3	29.68	W	0.03	68	44	41	42	43	Raining
4	29.97	N	0.06	72	42	40	39	40	Fine
5	30.21	N.E.	0.01	60	42	34	33	35	Cloudy
6	30.28	N.E.		41	39	34	32	36	Overcast
7	30.28	N	0.01	65	46	35	35	38	Fine
8	29.93	S.W.		47	45	38	39	41	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicicans, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Kings College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 P.M.), Cancer (2 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), Kings College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), Kings College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (12th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.)—8.30 P.M. Clinical Evening. Cases will be exhibited by Dr. A. Morrison, Dr. F. Parkinson, Dr. L. Guthrie, Dr. P. Weber, Mr. C. J. Symonds, Mr. P. O. Wallis, Mr. J. Hutchinson, jun., Mr. W. D. Farmer, and Mr. M. Smith.

TUESDAY (13th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.)—8.30 P.M. Papers.—Dr. W. Gordon: “The Effects of Violet Infusion on Malignant Growths—an Interim Report.”—Dr. H. D. Rolleston and Mr. L. Jones: “Primary Malignant Disease of the Vermiform Appendix.”—Exhibition of patients and epididymoscope demonstration.

MEDICO-LEGAL SOCIETY (22, Albemarle-street, W.)—8.15 P.M. Papers.—Dr. F. S. Toogood: “Alcoholism and Irresponsibility.”—Dr. A. Wilson: “The Medico-legal Aspect of Dual and Divided Personality.”

WEDNESDAY (14th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.)—8 P.M. Paper.—Mr. O. Johnson: “The Horseless Carriage, 1835-1905.”

DEBENTOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.)—6.15 P.M. Meeting.

HYGIENIC SOCIETY (Pagan's Restaurant, Great Portland-street, W.)—6.30 P.M. Hunterian Oration.—Mr. A. H. Tubby: “Recent Surgical Methods for the Treatment of Certain Forms of Paralysis.”

7.45 P.M. Anniversary Dinner.

THURSDAY (15th).—CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.)—8 P.M. Lecture.—Dr. R. Milne: “Conditions of Children, Physical and Mental, in Resident Schools.” (Arranged by the Childhood Society.)

FRIDAY (16th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.)—5.30 P.M. Mr. J. H. Evans: “Meningocele (cases and lantern demonstration).” Short Papers.—Dr. F. J. Poynton: “Jaundice in Infancy.”—Dr. E. C. Williams (Bristol): “Splenomegaly Biliary Cirrhosis.”—Mr. W. G. Naah (Bedford): “(1) Alopecia Areata Neurotica, (2) Renal Calculus.”—Dr. F. Langmead: “Tuberculous Ulceration of Stomach.”

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.)—8.30 P.M. Paper.—Dr. O. Childs: “A Study of the Typhoid Fever Epidemics in the United States Volunteer Camps in 1898.”

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.
MONDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.)—4 P.M. Dr. A. Whitfield: “Oliguria.” (8.15 P.M. Lecture.—Prof. Watson Cheyne: “On Interoptosis and Mobility of the Abdominal Organs.”)

A Clinical Lecture

APPENDICOSTOMY AND ITS POSSIBILITIES.

Delivered at St. George's Hospital on Dec. 14th, 1905,

By SIR WILLIAM H. BENNETT, K.C.V.O.,
F.R.C.S. ENG.,

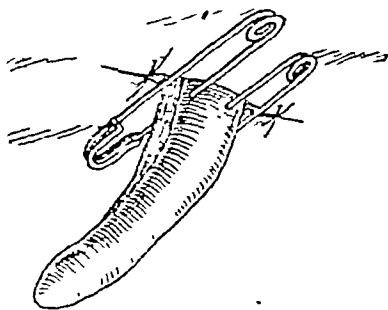
CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL, ETC.

GENTLEMEN,—The patient before us is, as you see, a woman of middle age who is under the care of Dr. W. Ewart. She has been for a long time suffering from symptoms pointing pretty clearly to what is known as ulcerative colitis, by which it is evident she has been reduced to the last degree of emaciation and weakness. The usual remedies having failed to bring about any improvement in her condition I was asked to see the case with a view to affording by surgical means facilities for a thorough irrigation of the whole of the large intestine. The history of the case is set forth in the registrar's notes,¹ but it is not necessary that it should be given in detail here, as it is sufficient for my purpose to assume that the nature of the case is as I have stated and that irrigation of the large intestine, all other methods having been tried without avail, seemed to be the only feasible plan of treatment.

In ordinary circumstances the flushing of the whole of the large intestine is by no means a simple proceeding; attempts at effecting it by injections from the rectum, however cunningly managed by means of the long tube or otherwise, are necessarily, from the nature of things, often ineffectual, and the only alternatives available until comparatively recently—namely, proximal colotomy or cæcotomy—are open to grave objections to which I shall presently refer. I therefore advised that the vermiform appendix should be utilised in this case as a means for introducing the irrigation. Appendicostomy was therefore performed, an operation which has until now been but little used—this is the first time that it has been done in St. George's Hospital—but which has been recently brought into prominent notice by an admirable communication read at the last meeting of the British Medical Association by Mr. O. R. B. Keetley.² The operation is in ordinary circumstances simplicity itself, as those of you who saw the proceeding in this patient's case can readily understand. An oblique opening into the abdomen in the direction of the fibres of the external oblique at the spot usually selected for the incision for removal of the appendix large enough to admit two fingers is made, the aponeurosis and subjacent muscular tissues being split in the ordinary way. The edges of the divided peritoneum having been held up by pressure forceps one or two fingers are introduced, the appendix is searched for and hooked up, a very simple proceeding if there are no adhesions. In the present case some recent adhesions about the cæcum complicated matters a little but caused, as you saw, no real difficulty. The appendix having been thus drawn out through the wound until its base is in contact with the parietal peritoneum is fixed in this position by a fine stitch of catgut or silk passing through the meso-appendix and adjacent edges of the peritoneum, care being taken to see that it is not twisted or kinked in the process. This stitch on being tightened up also serves to diminish the opening in the peritoneum.

In order to avoid any possibility of strangulation of the included meso-appendix this suture may be knotted after it has been passed through that structure before its ends are utilised for approximating the edges of the peritoneum. Fixation of the protruding appendix is even more simply effected, when there is no necessity for immediately opening it, by passing a sterilised safety-pin through it on each side between the muscular and mucous coats and closing up the abdominal wound beneath the

pins (see illustration). On the day following the operation in this case the protruding appendix was divided with sharp scissors a quarter of an inch from the level of the abdominal wall and finally secured in position by two stitches of silk fixing it to the skin. These stitches, although probably not absolutely necessary, are desirable in order to avoid any possibility of undue retraction of the stump. No discomfort or other disadvantage has arisen, as you see, from the operation. No reaction of any kind has occurred, and on this the fourth day, so far as the operation is concerned, the patient is unconscious of anything abnormal. A full-size soft rubber catheter passes down the appendix into the cæcum without the patient being conscious of its presence; no regurgitation or moisture comes from the stump. The sphincter at the cæcal orifice of the appendix grips the catheter firmly and closes completely after its withdrawal. An ideal state of affairs, in fact, exists for the application of remedies by irrigation, &c., to the whole length of the large intestine by means of an appropriate flexible tube passed into the cæcum through the stump of the appendix. A comparison of the condition of affairs existing in this case now with that which would have been present if either of the other alternatives to which I have referred—



Appendix fixed in position by safety pins.

viz., colotomy or cæcotomy—had been employed strongly emphasises the disadvantages connected with these, especially the discomfort and at times serious complications which arise from the escape of the contents of the bowel, with the accompanying irritation of the skin about the region of the opening in consequence of the entire absence of spontaneous power of control. Perhaps, however, the most striking superiority of appendicostomy as compared with the other methods mentioned is the ease and certainty with which the adventitious opening can be closed after it has ceased to be of use. All that is necessary in the case of appendicostomy is to cut down and to isolate the stump of the appendix, to deal with it as in a case of removal of the appendix, to drop it back into the peritoneal cavity, and to bring together the abdominal wound in the ordinary way; the difficulties, on the other hand, sometimes arising in attempts to close the colotomy or cæcotomy opening are too well known to require comment. In cases of cæcotomy there is the further objection that in consequence sometimes of the free passing away of the contents of the bowel, immediately after they emerge from the small intestine, through the opening in the abdominal wall a condition, in weak subjects, verging upon starvation rapidly supervenes.

The occurrence of this case gives me the opportunity for a more general consideration of appendicostomy, an operation which does not seem to me fully to be appreciated at the present time. The operation, like some other sound surgical methods, was the outcome of pure chance in the course of an operation for cæcotomy by Dr. R. W. Weir* of New York in 1902. Before the cæcum had been opened the appendix—with commendable unselfishness on the part of an organ so much vilified—presented itself in such a suggestive manner that it was at once employed to establish the communication with the cæcum. Since that time not more than a dozen cases of the operation have been published, two of which are included in Mr. Keetley's paper, to which I have referred.

For clinical purposes the possibilities of the operation may be considered under four heads. 1. As a means of affording facilities for the treatment of certain conditions of the large bowel and possibly of lesions of the small bowel

¹ The details of the case as well as some elementary matters included in the remarks as delivered are omitted in order to economise space.—
W. H. B.

² Brit. Med. Jour., Oct. 7th, 1905.
No. 4303.

* Loc. cit. and New York Medical Record, August 5th, 1902.
G

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of the operation area being invaded by disease, as is inevitable in certain instances of gastrectomy for gastric carcinoma. At all events, it is, I am sure, worth consideration from this point of view. Moreover, appendicostomy could be undertaken in patients whose strength had too far gone to enable them to undergo gastrectomy or adequately performed jejunostomy with any hope of survival. At first sight the substitution of appendicostomy for gastrectomy in carcinoma of the stomach seems almost Quixotic but a little consideration will, I believe, make it clear to any impartial mind that the idea is in certain circumstances not unreasonable. Some years ago I had under observation a case of gastric disease of a non-malignant type in which food could not be given by the stomach and could not be retained by the rectum; death followed finally from exhaustion in spite of every ordinary effort to sustain life. I have little doubt that appendicostomy would have afforded a means of giving nourishment which would certainly have prolonged, and might have saved, the patient's life. In this relation I feel convinced that there is a considerable future in discriminating hands for the operation now under discussion.

4. APPENDICOSTOMY AS A SUBSTITUTE FOR CÆCAL COLOTOMY.

Setting aside cæcal colotomy as inappropriate for any of the purposes already discussed, the operation is reduced to a measure which is applicable only in cases of obstruction from organic disease high up in the large bowel which is not susceptible of removal, the scope of appendicostomy as an alternative must therefore be small, as there are very few of such cases which cannot be far better treated by intestinal anastomoses. In any case, however, I am inclined to think that the advantage on the side of appendicostomy is more apparent than real, for although the operation itself may be comparatively easy under normal conditions about the appendix region, the tendency to contraction of the patent appendix, however widely dilated, seems to be more than a set off against the relative severity of the operation of cæcal colotomy; of course, the tendency to a recontraction may be obviated by incision into the bowel on either side of the appendix opening, but if such were made the operation could hardly be called with exactitude merely appendicostomy.

Such, gentlemen, are the main points which suggest themselves to me in connexion with this operation. I am conscious that an apology is due for devoting so much time to matters of which I have as yet comparatively little experience—my excuse must be that the cases suitable for this operation are not likely from the nature of things to occur often enough in the practice of an individual surgeon to enable a rapid experience to be gained. I have therefore thought it not unnatural to submit what seem to me reasonable possibilities for the consideration of others, as the time necessary for adequate experience of the results at the hands of one man would probably defer the formulation of any practical conclusions unnecessarily long. Whatever the ultimate scope of utility of appendicostomy may prove to be, it has already established beyond dispute that an organ which in these latter days has been marked down for somewhat ruthless destruction has, after all, an obvious surgical use.

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The Hunterian Lectures ON THE PHYSICAL ANTHROPOLOGY AND ETHNOLOGY OF BRITISH NEW GUINEA.

*Delivered before the Royal College of Surgeons of England on
Feb. 12th, 14th, and 16th, 1906.*

By CHARLES GABRIEL SELIGMANN,
M.B. LOND., M.R.C.P. LOND., F.Z.S.

LECTURE I.

Delivered on Feb. 12th.

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New Guinea stretches in a north-north-westerly and a south-south-easterly direction beyond the eastern Malaysian Islands of Celebes and Gilolo. To its south lies Australia, separated from it by Torres Straits which is but 80 miles across. To the east lies the bulk of Melanesia, which extends to the north of the eastern half of New Guinea almost to the equator. New Guinea itself lies wholly south of the equator; its area is about 300,000 miles; its western half belongs to the Dutch; the remaining half is fairly evenly divided between Great Britain and Germany.

The geological history of New Guinea, so far as it relates to recent post-tertiary elevation or subsidence, becomes important ethnologically when the proximity of New Guinea to Australia is considered. Torres Straits is studded with reefs and islands, so that if any considerable subsidence had recently occurred the possibility of the existence of land communication with Australia would have to be considered. As a matter of fact there is no evidence of any such considerable subsidence in late geological times; on the contrary, it seems clear that throughout the eastern portion of New Guinea a very considerable amount of elevation has taken place in late tertiary or recent times, so that the coastal zone in the central district of British New Guinea has come to consist largely of recent coralline and alluvial formations. The interior of British New Guinea as a whole is composed of a central range of lofty mountains giving rise to less lofty lateral ranges. In the former metamorphic rocks appear to predominate while volcanic rocks occur in the latter.

The New Guinea fauna are of the Australasian type. No mammals other than marsupial, with the exception of the dog and the pig which must be looked upon as introduced, occur; and I may here so far anticipate as to say that, in spite of statements to the contrary, there is no evidence that the natives of Daudai—that part of the New Guinea coast opposite to Cape York—or, indeed, elsewhere in New Guinea, physically resemble the Australian black or show evidence of mixture with any Australian element. With the conditions prevailing in Torres Straits I shall deal later.

Although the boundaries between British, German, and the Netherlands New Guinea are not in any sense natural this inquiry will be limited to the people of British New Guinea, since but very little material from German or Dutch New Guinea is available.

The actual task of differentiation of a people into its proximate elements may be done at sight, or after a slight amount of consideration in the field, or only after a large amount of leisurely comparison and consideration, while the ease with which this analysis is effected will vary according to the extent to which it is carried and the complexity of the problem investigated. Where the difference between two groups is so great as to suggest itself in some particular at sight and to be confirmed in other details as observation proceeds, the differentiation of these groups is usually perfectly sound, and the classification adopted may be of great and far-reaching importance. As an example of differentiation at sight confirmed by subsequent experience which has stood the test of time, Wallace's wonderfully faithful description of the points of difference between the Malay and Western Papuan may be mentioned. The description given by Wallace, a summary of which I quote, will ever remain a model to anthropologists, summarising

in enteric fever. 2. As a means of relieving certain forms of intestinal distension. 3. As a means for the introduction of nourishment into the intestine in certain cases. 4. As a substitute for caecal colotomy.

1. APPENDICOSTOMY AS A MEANS FOR THE TREATMENT OF CERTAIN CONDITIONS OF THE LARGE AND SMALL INTESTINE.

Certain conditions in this relation suggest themselves at once and are enumerated in the following order in Mr. Keetley's paper, in which they are dealt with so fully that it is unnecessary to occupy any space in considering them here: mucous colitis; dysentery; chronic constipation; ileo-caecal intussusception; and ulceration of the colon, syphilitic and otherwise.

Dr. Ewart is extremely anxious to utilise this operation for the purpose of obtaining access to the ileum through the ileo-caecal valve as he thus hopes to be able to apply local treatment to the lesions affecting the distal portion of the ileum in enteric fever. By a sufficient dilatation of the stump of the appendix it is possible to see the ileo-caecal valve through a small speculum and so to pass a flexible tube through it, but it must not be forgotten that, apart from the difficulty of frequently repeating this proceeding, if the point of junction of the appendix with the caecum is too much dilated the sphincter at that spot as well as the valve of mucous membrane sometimes existing would be destroyed and the great advantage of appendicostomy—viz., the prevention of regurgitation of the bowel contents through the stump of the appendix—would be annulled. It seems, however, that the position of the ileo-caecal valve is fairly constant when the caecum is moderately distended and it is then possible on the cadaver to introduce with comparative certainty a rigid tube appropriately curved through the ileo-caecal valve after passing it down the open appendix stump. It is, however, more than doubtful whether this manoeuvre is sufficiently easy to make it feasible in ordinary circumstances.

With regard to chronic constipation, for which appendicostomy has been suggested as a means of treatment, there is no doubt that the introduction of appropriate drugs would be easy through a short cut to the large bowel such as this operation provides. At the same time I am compelled to admit that I do not in practice meet with cases of constipation which in the absence of adhesions or organic disease are so intractable as to justify, in my opinion, any of the operations—e.g., ileo-colostomy—which are at present practised in connexion with them. Should such a case, however, come under my treatment I should certainly try appendicostomy before resorting to short-circuiting the ileum and colon, not only as the operation itself is more simple, but also because, unless current reports are misleading, the ultimate results of ileo-colostomy are now found to be by no means so satisfying as we were at first led to expect. In this connexion and in the other conditions for which appendicostomy is considered suitable, it must be admitted that its scope may be considerably limited by the fact that for its proper performance the proximal end of the appendix lumen must be healthy and patent over a length of at least half an inch. Adhesions, however dense, need be no bar to the operation as such, although their existence may convert a very simple proceeding into one of so much difficulty and severity as to negative the propriety of its performance in some cases.

2. APPENDICOSTOMY IN THE TREATMENT OF CERTAIN FORMS OF INTESTINAL DISTENSION.

There is occasionally met with a form of intestinal distension after abdominal operations in very toxic cases and in connexion with some acute diseases—e.g., pneumonia—which drugs seem powerless to affect, the distension being apparently due to toxic paralysis. In such cases, unless relief can be

given by surgical means, the increasing distension rapidly leads to a fatal issue mainly in consequence of the embarrassment of the lungs and heart. It is a disappointing fact that in such cases the mere opening of the bowel is sometimes followed by little or no relief, the amount of flatus escaping after incision being curiously little. I can recall a case in which the intestine was opened in several places with but very trivial and temporary relief. Indeed, the only really satisfactory cases of the kind in my own experience have been those in which the bowel contents were pumped out by aspiration as the flatus, &c., re-accumulated. With the intestinal wall in the attenuated state which exists in these cases the fixing of the margins of the opening around the pumping tube sufficiently closely for aspiration is not easy; it is, however, obvious that a natural canal like the appendix would be admirably adapted for the purpose, and the next case of the kind with which I met I shall certainly try pumping out the intestine through a tube fixed in the appendix. A difficulty in this matter, of course, at once suggests itself by the doubt whether in an abdomen thus distended the appendix could be drawn up through the abdominal wall, a matter which, I suppose, would largely depend upon its position; at all events, it might be possible if the distended caecum were first temporarily emptied by aspiration or by an incision which is immediately closed, for the appendix to be drawn up before re-distension occurs, an attempt certainly justifiable in intractable cases like these in consequence of their gravely lethal tendency. Further, I think it worth considering whether in certain cases of resection of portions of gut and some operations dealing with partly paralysed bowel in which distension may be apprehended, appendicostomy as a safety-valve against subsequent distension may not be desirable. The abdomen having already been opened, the appendix is readily, in the majority of cases, drawn out by means of a pair of dressing forceps introduced through a button-hole in the abdominal wall, fixed and immediately opened, a proceeding which adds nothing to the severity of the original operation. Moreover, the open appendix in addition to being a safety-valve against distension, might be useful for the administration of drugs and, indeed, of nourishment—a point the general aspects of which are interesting.

3. APPENDICOSTOMY AS A MEANS OF ADMINISTERING NOURISHMENT AND AN ALTERNATIVE TO THE RECTUM FOR THAT PURPOSE.

It is a matter of common knowledge that life can be sustained for an indefinite period by nourishment administered by the rectum provided that the necessary amount of nutrient material can be retained by the bowel, and provided that the patient is not the subject of some disease which makes a heavier call upon the powers of resistance than can be met by rectal feeding. At the same time it must be conceded that, apart from the difficulty often met with in the retention of a sufficient amount of nutrient material during the course of a protracted case, rectal feeding in itself is not infrequently painful and in sensitive patients repulsive; moreover, the quantity of material introduced is vastly out of proportion to the amount utilised, and further the constant disturbance necessary in patients who are grievously ill often militates seriously against recovery or prolongation of life. It must also be allowed, *ceteris paribus*, that the higher up in the bowel nutriment is introduced the greater is the proportion absorbed for purposes of nourishment.

Assuming these premisses to be correct, it is clear that a given amount of nutrient material passing into the caecum would have a higher nutritive value than a similar quantity introduced into the rectum and that a still higher nutritive value would be derived if it could be introduced into the small intestine.

As already shown, the operation of appendicostomy in a normal condition of parts about the caecum is a simple and entirely safe proceeding in the hands of a competent surgeon. It therefore seems to me that in any case in which prolonged rest of the stomach from food is desirable, or in which feeding by the mouth is likely to be permanently or for long periods impracticable, appendicostomy may provide a channel for the administration of nourishment far superior in every respect to that afforded by the rectum; indeed, I am inclined to the opinion that in some cases of malignant disease of the gullet and cardiac region of the stomach it may finally even supplant the operation of gastrostomy by reason of its simplicity and the avoidance of possibility

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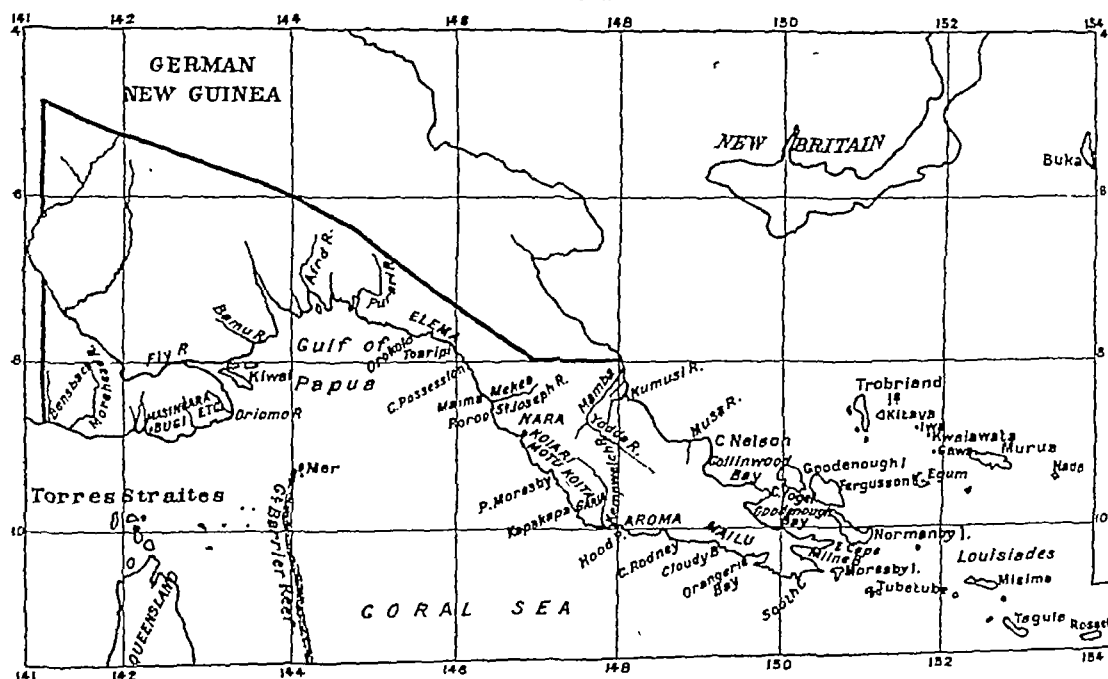
and contrasting as it does the chief physical and mental characteristics of the two races:—

It appears, therefore, that, whether we consider their physical conformation, their moral characteristics, or their intellectual capacities, the Malay and Papuan races offer remarkable differences and striking contrasts. The Malay is of short stature, brown-skinned, straight-haired, beardless, and smooth bodied. The Papuan is taller, is black-skinned, frizzly-haired, bearded, and hairy-bodied. The former is broad-faced, has a small nose and flat eyebrows; the latter is long-faced, has a large and prominent nose, and projecting eyebrows. The Malay is bashful, cold, undemonstrative, and quiet; the Papuan is bold, impetuous, excitable, and noisy. The former is grave and seldom laughs; the latter is joyous and laughter-loving—the one conceals his emotions, the other displays them.¹

From this quotation it is clear that the factors upon which Wallace depended to differentiate Papuan and Malay were physical and cultural, using the latter in a somewhat broad way to express not only technical differences in the arts and crafts but the underlying psychical peculiarities which have largely determined these divergences. Besides these there is a third criterion—namely, language, which when not too enthusiastically used may prove a useful guide. The nomenclature to be adopted must now be defined. I follow Keane in believing that the term "Papuan," which has hitherto been

the interior eastwards from the neighbourhood of the parallel of 150° E. longitude to the German boundary. These people, if they be considered in the broadest terms, are characterised by a stature shorter and a less heavy and bulky physique than the majority of the true or western Papuans. In this they resemble the Papuo-Melanesians, from whom they are differentiated by their more Papuan features, by the fact that they usually speak Papuan languages, as well as by a host of cultural characteristics. The question of the position of these folk hitherto regarded as Papuan is one of extreme difficulty. They might perhaps be regarded as the result of the admixture of the incoming Melanesian wave, spreading from the south-eastern peninsula of New Guinea, with a previously existing Papuan element, but in addition to considerations based on cultural characteristics the prevailing mesocephaly of the folk under discussion seems to me against this view. Personally I am inclined to consider them fundamentally Papuan but profoundly modified by the influence of that immigrant stock which I shall later show exists on the southern coast of British New Guinea. And since whatever be their origin it is necessary to describe these folk, and for this purpose a general name is necessary, I

FIG. 1.



Map showing boundaries of British and German New Guinea.

used to describe the inhabitants of New Guinea generally, is unsuitable for this purpose, since even in British New Guinea there are groups of folk so little alike that they may be considered to be racially distinct.² This was first pointed out by Haddon who recognised "a Melanesian migration into New Guinea," and further, "that a single wandering would not account for certain puzzling facts."³ If a word equivalent to an inhabitant of New Guinea be required the term "Papuan" might be employed; in any case the term "Papuan," unless qualified, should be limited to the geographically more western Papuan, that frizzly-haired and often mop-headed race, with a skin colour varying from dark chocolate brown to blackish, recognised and described by Wallace as the typical Papuan. The eastern Papuans—that is, the generally smaller, lighter coloured, frizzly-haired race of the eastern New Guinea Archipelagoes and the eastern peninsula of New Guinea—now require a name, and since the true Melanesian element is dominant in them they may be called Papuo-Melanesians. But within these groups, wide as they are, no room has been found for the great bulk of inland folk who, as far as our present knowledge extends, everywhere inhabit the predominantly mountainous country of

propose to call them Eastern Papuans, because this prejudices their origin as little as may be while emphasising their geographical position, which, broadly speaking, is to the east of the true Papuan territory. These, then, with an immigrant folk on the southern coast, to be described later, constitute, as far as we know them at present, the races of British New Guinea.

I may now allude to some of the more marked differences between the Papuan and the Papuo-Melanesian. Physically the Papuan is usually taller and is often more dolichocephalic than the Papuo-Melanesian; he is always darker, his usual colour being a dark chocolate or sooty-brown; his head is high and his face is, as a rule, long with prominent brow-ridges, above which his rather flat forehead usually slopes backwards. The Papuo-Melanesian's head is usually less high and the brow ridges are less prominent, while the forehead is commonly rounded and the difference in cranial form is well reproduced in Fig. 2. The skull reproduced in Fig. 2. The skull No. 95 B, is that of a man of the Western tribe of Trobriand, whose retreating forehead may in part have been produced by manipulation during infancy. The Papuan nose is longer and stouter and is often so arched as to present the outline known as "Jewish." The character of its bridge varies, but typically

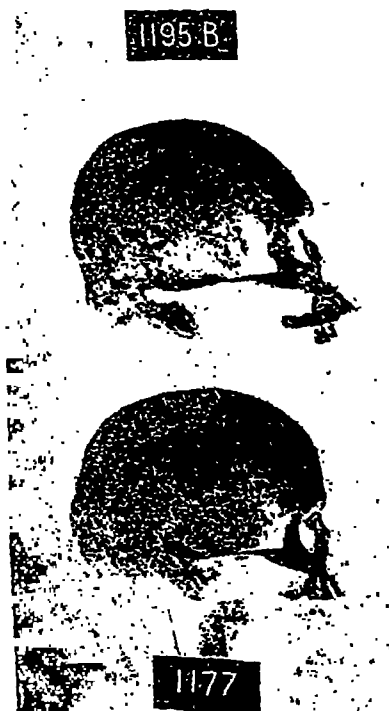
¹ The Malay Archipelago, 1894, p. 450.

² Ethnology, 1901, p. 222.

³ The Decorative Art of British New Guinea, 1894, p. 267.

the nostrils are broad and the tip of the nose is often hooked downwards. In the Papuo-Melanesian the nose is, as a rule, smaller and the truly Papuan type of hook does not, as far as my observation extends, occur. Both races have frizzly hair and though prognathous and full-lipped they appear less so than does the African negro. Fig. 3, the photograph of a man from the Aird river delta, shows features which are fairly typical of the Papuan. All the Papuo-Melanesian groups speak languages built on the common model of Melanesian grammar and, so far as our knowledge goes, are divisible into groups, the constituent languages of each of which contain numbers of common words, all related to the common stock language of Oceania. With the Papuan languages it is otherwise; quâ vocabulary they present a number of apparently unrelated

FIG. 2.



Papuan (1195 B) and Papuo-Melanesian (1177) skulls.

extend westwards along the northern coast as far as Collingwood Bay. Upon the southern coast they reach only as far as Mullius Harbour. In the central district and generally speaking in the mountainous country inland the natives belong to the Eastern Papuan group, while the southern coast line from Aroma to Cape Possession is colonised by an immigrant stock which I term "Motuoid," deriving this term from the name of their best known tribe, the Motu.

In New Guinea, where a traveller will often meet with a different dialect, or even perhaps a language, every 20 or 30 miles he travels, and where neighbouring folk belonging to the same race may present divergences, it is necessary to have some general term for people presenting similar or allied physical characters though perhaps speaking different dialects or possibly even languages and varying to a greater or less degree in culture. To such a collection I apply the term "ethnic group." In the present stage of our knowledge it is often convenient to unite temporarily two or more such ethnic groups on account of their similarity in some cultural or physical characteristic. To such often purely artificial approximations I apply the term "stock" or "congeries," or where, as is often the case, the ethnic groups under consideration occupy an easily defined geographical area they are connoted by the area which they inhabit. In British New Guinea tribes are usually small and several may be contained in a single ethnic group and I have not hesitated when convenient to call an ethnic group by the name of one of its best-known constituent tribes.

WESTERN OR TRUE PAPUANS.

The Papuan Gulf lies to the west of Cape Possession and "Gulf district" is the usually recognised term for the greater part of its shore. In a strict geographical sense it would seem that the eastern shore of the Fly river should form the western boundary of the Gulf. But custom and convenience are both against this use; the vast delta of the Fly has always been considered as a separate province and it becomes necessary to fix some more or less arbitrary western boundary to the Gulf district. It is obviously convenient that this boundary, since it is geographically unreal, should, as far as possible, mark the eastward limit of the culture characteristic of the Fly district, and in the present state of our knowledge a line somewhat west of the Bamu river would appear to fulfil this condition. Remembering then that the western limit of the Gulf district is geographically unreal and may later prove to be ethnographically unsound, the Gulf when spoken of here will be held to include the coast line stretching from Cape Possession (Waimatama) in the east to the western side of the Bamu estuary in the west. So defined, the mouth of the Purari river forms roughly the centre of the Gulf district, and since the Koriki tribes, the most homogeneous Gulf people with which we are yet acquainted, cluster round the mouth of the Purari it becomes convenient to take the neighbourhood of this river as a starting point in describing the Gulf population. The district around the mouth of the Purari has been called "Naman," but since this term is geographical and embraces an indefinitely large area stretching westward I avoid using this term for folk inhabiting the Purari delta, and following the rule of nomenclature already alluded to call these folk the Koriki group. So defined, the Koriki form one of the most homogeneous folk in British New Guinea. Owing to their inveterate head-hunting propensities many of their skulls have come to Europe and many museums possess specimens which have been carefully measured and described, so that mention need only be made of the papers by Sir William Turner⁴ and Mr. George A. Dorsey.⁵ But until recently it has not been clear from which part of New Guinea these skulls were derived, though the community of style and often identity of pattern of the designs incised or scratched on the frontal bone made it obvious that all the skulls belonged to one group. Specimens Nos. 1201 C—1201 L of the College of Surgeons collection are from the Purari delta and exhibit the usual cranial and decorative characters of such skulls. For the following account of the origin of the carvings on the frontal bone I am indebted to the Rev. J. H. Holmes. This information makes clear that the skulls are those of enemies, a point upon which previously

⁴ Decorated and Sculptured Skulls from New Guinea: Proceedings of the Royal Society of Edinburgh, vol. xxii.

⁵ Observations on a Collection of Papuan Crania: Field Columbia Museum Publications, Anthropol. Series, vol. II.

stock languages, while of their grammar it can only be said that while a number of them conform to certain rules it is clear that the grammar of none of them presents Melanesian characters. A great difference is also present in the system of enumeration of the two races. While the Papuo-Melanesian counts easily by the quinary, decimal or vigesimal system the Papuan has only two numerals, one and two, and counts with certainty only up to five by combining these. An exception is, however, to be noted: certain, if not all, of the Binandere-speaking tribes have numerals up to three and by using their fingers can make shift to count to ten. While artistically considered the finest Papuan carving is far from mean the Papuans have not obtained the skill of the Massim Papuo-Melanesians. On the other hand, the large Gulf club-houses are superior to any other buildings in British New Guinea, while the Gulf Papuan alone, as far as our present knowledge goes, has evolved a definite religious system in which departmental duties play a well-marked part. Along the southern coast line the area in which true Papuans occur is from Cape Possession westwards to beyond the Anglo-Netherlands boundary; upon the north coast Papuans are found from the Anglo-German eastwards as far as Collingwood Bay and are known to extend up the valleys of the Mamba, Opi, Musa, and Kumusi rivers. The Papuo-Melanesians inhabit the south-eastern peninsula and archipelagoes and

the greatest uncertainty has prevailed. Mr. Holmes's information is substantially as follows. A man who kills an enemy receives the latter's skull at the cannibal feast at which the body is eaten; he keeps the skull until he becomes too old or infirm to join in further warfare; when this time arrives he and other old men of his generation carve the skulls which they have meanwhile kept in their club-house, each individual carving that design on the forehead of his skulls which is peculiar to his own family, or more probably clan. This carving is generally done while the younger men of the tribe are away on the war-path; if when they return it is found that they have been successful the skulls are put away, but if success has not attended the younger men then the old men make it known by a chanting and a beating of drums that they are about to make a presentation of skulls to the young warriors. The latter at once set to work to prepare a feast for the old men. At a given stage in the feast the old men present the skulls to the warriors, assuring them that in future they will be braver and consequently more successful than formerly, as they will have to help them the bravery of the individual whose skull they now receive. It is alleged that a similar custom is observed by the non cannibal Elema tribes to the east of the Purari, but here for the human skull is substituted the skull, lower jaw, or tusk of the wild boar.

Since the most important characters are substantially similar or present in the main a similar range of variation in the series of Koriki skulls described by various authors it will be enough to quote the indices of the skulls in the College collections with the warning that the average cephalic index is rendered lower than in other collections (68 as against 72 in Dorsey's collection) by the presence of a single skull with the specially low index of 62.6. Generally

FIG. 3.



A man of Goaribari, Aird river delta.

speaking, the skulls are markedly dolichocephalic and prognathous, micro- or meso-cephalic, and mes-orhine. These characters agree pretty closely with those calculated from measurements on the living (22) made by Dr. W. M. Strong (O.I. 72, N.I. 83), though both in crania and the living there are considerable individual variations from the average. The average male height is just under

1600 millimetres (63 inches), the hair is always frizzly, and the skin is rather dark. These Purari folk are variously estimated to number from 10,000 to 40,000 and are divided up into a number of tribes, of which the Koriki and Iani are the best known. Their language is different from those Kivai dialects spoken in the riverine district of the Gulf and is also unlike that of the Elema tribe to the east. Their villages are large and a single village—namely, Maipua—has been estimated to contain as many as 2000 or 3000 inhabitants. There is almost continual fighting between the Purari delta tribes, since besides skull-collecting the custom of vendetta prevails.

FIG. 4.



Men of Masingara tribe, Daudai.

That portion of the Gulf east of the Purari delta is as a whole characterised by the taller stature of its inhabitants and their higher cephalic index. This area includes the people of Orolo, Toaripi, Jokea, and Lese. Probably these belong essentially to one group, generally known as Elema. In all of them the average cephalic index is 77, while their average height varies from 1667 millimetres (65½ inches) for Jokea and Lese at the eastern extremity of the Gulf to 1702 millimetres (67 inches) for Toaripi and 1636 millimetres (66 inches) for Orolo. 12 Orolo men measured by the Rev. J. H. Holmes, however, gave the high average of 67½ inches and varied from 63 to 71 inches, the latter an enormous height for a Papuan.

In spite of the apparent homogeneity in certain respects of the folk in this district the character of the nose varies greatly, presenting two well-marked types of broad and comparatively short and long narrow nose in individuals of the same group, and I believe this variation in an extreme form occurs even in the same village. Unfortunately, I have but few nasal measurements from this area but in five men the nasal index varied from 70 to 93.

West of the Purari for some miles stretches an area of mud and swamp constituting the deltas of a number of big rivers and smaller streams. Going eastward from the Purari the chief of these rivers are the Kapaina, the Kikori, the Omate (Aird river), the Turama, and the Bamu. For convenience this area may be called the riverine portion of the Gulf. Of the inhabitants of this area but little is known and that little is limited to the mouth of the Aird river and the country west of it. The culture of the western moiety of the riverine area presents affinities with both that of the Fly and the eastern half of the Gulf.

Physically all that is known is that on the island of Goaribari at the mouth of the Aird river there exists a highly brachycephalic population which perhaps extends to the Turama river. The cephalic index of five Goaribari men gave the high average of 87, while six skulls from the Aird river delta gave an average of just over 80 and varied only between 80 and 81.5. The average height of the five Goaribari men was 1611 millimetres, or about 63½ inches. Passing westwards to the Bamu the cephalic index of eight men varied from 72 to 78, with an average of 76 while two male crania gave an average index of 75.6. Thus the folk at the mouth of the Bamu are just mesocephalic, contrasting strongly with the highly brachycephalic natives of Aird river. Although at the mouth of the Fly river

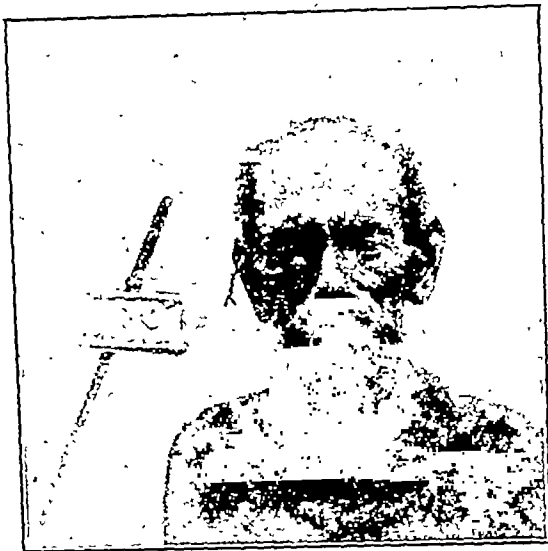
there is also a strong dolichocephalic element, the brachycephals again crop up and appear to have spread into Torres Straits where mesocephaly and brachycephaly are common in the western tribe, though the former is scarce and the latter is absent in the more isolated eastern tribe. D'Albertis found that the brachycephalic element occurred at Canoe Island and Kiwal in the upper and lower reaches of the Fly delta respectively. Above this—i.e., in the interior of the Fly river district—the 13 male and seven female skulls which he collected varied from 67·7 to 77·1, but the pickled head brought back by him had a cephalic index of 84. Living in the bush west of the Fly are the Masingara, the most homogeneous group of dolichocephals yet met with in New Guinea. The cephalic index of these folk (11 males) varies from 68 to 74 with an average of 71; they are of moderate height, 1616 millimetres (63½ inches), and have invariably frizzly hair. The skulls of individuals of bush tribes in this neighbourhood collected by D'Albertis and Haddon are dominantly dolichocephalic, while along the coast as far west as Mawatta at the mouth of the Paboturi river opposite Saibai, the brachycephalic stock found in the Fly delta is represented—e.g., skulls from the Oriomo river are highly mesaticephalic or brachycephalic. These somewhat puzzling relationships become clear in the following table. I have taken the Torres Straits measurements from Haddon's paper in the *Geographical Journal* for 1900.

Cephalic Index.	Living subject.	Skulls.						
		Madingara. Males.	Bush tribes, Daudai, Male and female.	Kawit. Male and female.	Canoe Islands. Male and female.	Fly river interior. Male and female.	Torres Straits	
							Western tribe. Male and female.	Eastern tribe. Male and female.
—75·9	11	12	2	—	19	41 (64%)	29 (68%)	
76-79·9	—	4	6	1	2	12 (19%)	4 (12%)	
80 +	—	—	4	3	—	11 (17%)	—	
Totals.	11	16	12	4	21	64	33	

To study the physical characteristics of the natives of the country west of the Fly district was one of the main objects of the Daniels expedition, since it had become important to determine whether the reiterated assertion that in British New Guinea near the Dutch boundary there were natives resembling Australians was true or not. I can definitely state that 42 natives carefully examined physically and measured do not show any Australian characteristics and the same holds for the much larger number of natives seen, with the single exception that one partially bald old man seen at Bugi momentarily recalled one of the Arunta figured by Mr. Spencer and Mr. Gillen. The folk examined at Bugi consisted of the shattered remains of a number of tribes from Bugi and Strachan Island who had escaped death at the hands of Tugeri raiders from over the Dutch border. Further west—i.e., actually on the Anglo-Dutch boundary and three days up the Bensbach river—the Toro tribe was met with and its members studied. There is a slight amount of brachycephaly in both folk; ignoring this the Bugi may be said to be predominantly mesaticephalic, the Toro to be dolichocephalic. The latter are considerably taller (1691 millimetres—i.e., 66½ inches) than the Bugi group (1640 millimetres—i.e., 64½ inches). In both folk there was considerable variation in stature and feature. The Toro are spare and moderately tall, with thin legs and often thin bony faces, projecting zygomatics and marked supra-orbital ridges. Facially they seem to vary more than other western tribes, some of them closely resembling examples of the less intelligent types of European faces. The hair of all is frizzly and the nostrils are generally bored, in some cases in two places. In many these holes have become very small so that the plugs that some of the men wear are evidently not considered important articles of toilet. Their noses are generally long and coarse, with moderately broad bridges, and often with coarse fleshy tips which are never hooked. Generally speaking, the Toro appear long-faced. In some of the older men the front teeth have gone, in others the fangs

are exposed by receding gums, but in every case their teeth are white and no sign of betel chewing is seen, nor are any lime gourds noted. One of their favourite attitudes is to stand on one leg, the sole of the foot of the other being

FIG. 5.



A man of the Toro tribe, Bensbach river.

applied just above the knee of the leg which supports the weight of the body: in fact, they assume the attitude figured by Grogan for the Dinkas of the Nile swamps.

LECTURE II.

Delivered on Feb. 14th.

MR. PRESIDENT AND GENTLEMEN,—For the following information which concerns the Papuan inhabitants of the northern portion of British New Guinea I am largely indebted to Mr. C. A. W. Monckton, the resident magistrate for the northern division, and to Mr. E. L. Giblin. The former has kindly identified the villages of the folk, measured and classified them according to their geographical position, our measurements having been taken from such prisoners and members of the armed native constabulary as the expedition came in contact with. I am also indebted, though to a less extent, to Captain Barton.

First, considering the coast line from the German boundary to Porlock Bay to the west of Cape Nelson, the country is inhabited by a people typically represented by the inhabitants of the lower Mamba river, all speaking dialects of a common language called by Mr. Monckton 'Binandere.' As a matter of convenience I propose to extend this name so as to include the many tribes of the folk speaking these dialects. Physically, the Binandere are a particularly sturdy set of people. (Fig. 6.) The average of 14 men measured haphazard from villages scattered all over their country was 1658 millimetres (nearly 65½ inches). Only one man fell below 1600 millimetres (63 inches), while four were over 1700 millimetres (nearly 67 inches), the tallest being 1740 millimetres (over 68½ inches). They are predominantly mesaticephalic, with a tendency to brachycephaly (average 78). In general appearance they rather recall some of the Elema natives of the Papuan Gulf, but the comparatively delicate nose found in some Gulf men does not as far as my observation goes occur among the Binandere. I have been able to gather little about their customs or beliefs, but they are probably not totemic and quite obviously are less afraid of the dark and supernatural agencies than most other Papuans. Their dances are elaborately pantomimic and are more energetic than I have seen performed by natives of other parts of British New Guinea. Mr. Giblin tells me that each village possesses, or should possess, a dancing house, inside which dancing takes place nearly every evening. They are frankly cannibal and distinctly warlike and are the only people who have ever attempted to combine in any number against the

Government. Mr. Monckton informs me that the Binandere have been gradually pressing eastwards along the coast and that originally they came from across the German border.

The system of enumeration made use of by some at least, if not by all, of the Binandere is different from that of the Papuans of the southern coast whose extremely limited command of numerals has already been referred to. The Binandere have numbers up to three and then count up to 10 on the fingers—e.g., the number 4 is signified by describing the hand with four digits flexed and the little finger (for which they have a separate term) extended, 6 by the thumb of the second hand, and 10 by words signifying "hands two."

On the mountainous mass which constitutes the Cape Nelson peninsula are three tribes—the Okena, Mokuru, and Korafi. All are Binandere-speaking tribes, but, according to Mr. Monckton, the Korafi are at enmity with their

FIG. 6.



A Binandere man.

western neighbours and really consist of the representatives of a number of broken tribes shattered by the pressure of other Binandere-speaking tribes moving east, of whom the Okena were the foremost until they were checked by the Korafi confederation shortly before this region came under Government influence. A portion of the coast line between Mokuru and Korafi—i.e., between McLaren Harbour and Port Hennessey—is inhabited by the Arifama who, Mr. Giblin states, speak a Melanesian language and are lighter skinned than their neighbours and who are at any rate provisionally to be regarded as the most western representatives of the Papuo-Melanesian race. The Arifama, according to Mr. Monckton, united with the Korafi in repelling the onset of the Okena and their kindred tribes. The valleys of the Mamba, Musa, and the lower Kumusi river are inhabited by Binandere-speaking tribes. The inhabitants of the Opi and Yodda valleys and the slopes of Mount Lamington, according to Mr. Monckton, resemble those of the Mamba and speak Binandere dialects but are somewhat lighter in colour. This Opi-Yodda group resembles the Binandere in being rather tall; the average of six men was 1672 millimetres (65½ inches) while the average cephalic index of seven men with a minimum of 70 and a maximum of 82 was 72. Probably this index is unduly low, being calculated on measurements from too few subjects from villages scattered over too wide an area. I may refer here to a skull collected by Captain Barton at Kokoda, 13 miles E.S.E. of Mount Victoria in the

Yodda Valley—i.e., south of the Yodda river—with cephalic index of 77. The general appearance of this skin judged by such characters as the prominence of its muscular impressions and development of its supra-orbital ridges, agree so well with that of skulls belonging to that large group which I have called the Eastern Papuan that we may regard it as derived from an individual of this group and provisionally consider the northern slopes of the main range as the southern boundary of the Opi-Yodda, Binandere speaking group.

EASTERN PAPUANS.

East of the Cape Nelson peninsula tribes speaking Papua dialects occur, but according to Mr. Giblin they do not reach the coast again in an easterly direction for some 30 miles where a tribe which he calls Pem appears some 20 miles west of Cape Vogel. Inland of this tribe other Papuan-speaking tribes extend in the mountains as far eastwards as roughly say the parallel of 150° E. longitude but along the coast Papuo-Melanesians folk speaking Melanesian dialects are found. The Papuan tribes east of Cape Nelson, it is generally agreed, have not the tall stature and notable physique of the Binandere-speaking tribes nor does their language resemble those of the Binandere stock. Probably they are to be regarded as related to the Mailu and Domara of the south coast and, like them, as members of the Eastern Papuan congeries who speak Papuan dialects. In the main range and its higher lateral ranges tribes speaking Papuan dialects extend westward from Mount Suckling wherever west of this the mountains have been explored. That some of these mountain tribes have to some extent been influenced physically by contact with Papuo-Melanesian or immigrant Motuoid tribes seems likely enough and such influence, I believe, may usefully be taken into account when considering the physical characters met with in these tribes. Mr. Giblin believes that one of these tribes, the Dimadima, between Mount Simpson and Mount Thomson on the northern slopes of the main range, has intermarried considerably with Papuo-Melanesians, while I have myself collected wavy hair from the head of an adult of the Lakumi tribe living among the hills of the upper reaches of the Hunter and Musgrove rivers, affluents of the Kemp Welch (Vanigela), who speak a dialect of Garla, a stock Papuan language. Reference will be made later to the Sinaugolo who speak a dialect belonging to the Motu group of Melanesian languages in whom there is tolerably clear evidence of the existence of a Papuan strain.

The Mailu inhabit the country around Port Glasgow and Milport Harbour. They are a predominantly mesocephalic folk with an average cranial index of 78.6 and a medium stature of 1600 millimetres (about 63 inches). Their skin colour is generally a moderately light *café-au-lait* and their hair is sometimes curly rather than frizzly. Although speaking a Papuan dialect their appearance strongly suggests admixture with some other stock. Orangerie Bay, to the east of the Mailu, is very little known. Captain Barton tells me that the folk are physically Melanesian rather than Papuan. This is borne out by the measurements of four Bonabona men, said to come from Orangerie Bay, where, according to Mr. Giblin, a Melanesian dialect is spoken. These men resemble the Mailu though they are more brachycephalic. On the other hand, a dolichocephalic element probably exists here since in the College collection is a skull (No. 1201 B) with a cephalic index of 70.5.

East of Baxter Bay lies Cloudy Bay. The natives a few miles inland are said to resemble those on the coast. The latter I have not seen but the former are shorter, darker, and less round-headed than the Mailu men further east. They are also said to be fiercer and less amenable to Government influence. The average cephalic index of eight men was 78 (minimum 71, maximum 83). A single skull from Domara, some 20 miles further east, described by Sir W. Turner, has an index of 69. East of Cape Rodney the coast is occupied by non-Papuan folk who yet present many characteristics differentiating them from the eastern Massim. Various groups of these folk all speaking Melanesian dialects inhabit the coast as far west as Cape Possession—i.e., for a distance of some 150 miles. Over this extent of country Eastern Papuan tribes are found in the hills inland and in some instances have, within historic memory, forced their way towards the coast. Two almost certainly originally Eastern Papuan tribes actually inhabit the coast in the present day, but in both cases they have intermarried with

the Melanesian-speaking coastal folk and have partially or entirely adopted a Melanesian dialect. Ignoring these for the present, measurements on the living show that the mountain folk of the Rigo and Port Moresby districts are predominantly mesaticephalic with a tendency to brachycephaly. The chief ethnic groups speaking Papuan languages with which we are acquainted in this region are the Garia and the Koiari, the former constituting a fairly homogeneous group, while Koiari is a term applied by the Motu and Kolta coast tribes to the bush tribes living in the hills behind the coastal zone. Nevertheless, these bush tribes appear to have so much in common that it may later prove that the tribes classed as belonging to the Koiari group do, in fact, constitute a tolerably homogeneous whole. In the mountains behind the Koiari men of much the same build and height are met with, speaking, according to Captain Barton, dialects akin to Koiari but distinguished in their native mountains from these by the sporran-like garment worn by the men. Four of these mountaineers, measured by Haddon, had an average cephalic index of 81 (minimum 78, maximum 83) and an average stature of 1613 millimetres (63½ inches).

The Garia dialects—for I am told that there are at least two forms of a stock language spoken by different sections of the Garia—are spoken over a considerable area to the west of the Kemp Welch river which constitutes their eastern boundary. Their headquarters may be regarded as the Government Loch Range whence they have spread in a westerly direction towards the coast, their most easterly tribe, the Manukoro, being in contact with the coastal folk behind Kalia. 20 men of the eastern branch of the Garia inhabiting the western bank of the Kemp Welch gave an average cephalic index of 77 (minimum 72, maximum 86) and are very decidedly predominantly mesaticephalic. Four skulls collected by myself from the bush in the immediate neighbourhood of the Garia village of Gosoro are, however, all brachycephalic with an average cephalic index of 81·2, a discrepancy for which I can suggest no explanation. The average stature of 20 men is 1603 millimetres and their general appearance suggests that there may be a considerable infusion of non-Papuan blood in the group. This idea especially receives support from the character of their nose, the root of which is often moderately high and the tip seldom hooked, as well as from the fact that their hair may be occasionally curly and even wavy. In this and other respects they resemble their neighbours the Sinaigolo, in whom these characters are accentuated and who speak a Melanesian language. (Fig. 7.)

FIG. 7.



A man of the Ikoro section of the Sinaigolo.

Of the folk speaking the western Garia dialect, which may be called Manukoro, since it is spoken by that tribe, I have seen and measured only five men belonging to the Lakumi tribe inhabiting the upper reaches of the Hunter and Musgrove rivers. As far as this limited number goes, they seem to be rather taller and more dolichocephalic than the eastern Garia and one of them had faintly curly hair

which was almost wavy. Behind the Garia and rather to their east in the mountains between Mount Potter and Mount Obree are found a folk speaking a language called Barai. Six men from the village of Seramine were mesaticephalic, with an average cephalic index of 77 and a stature of 1578 millimetres (62 inches).

Koiari is the general term applied to the group of mountaineers living to the east of the Garia group and extending through the country behind Port Moresby. Like the Garia or Barai-speaking folk, measurements on the living show that they are mesocephals with an average stature of 1582 millimetres (rather under 63 inches). (Fig. 8.) But

FIG. 8.



A Koiari man

there is a curious discrepancy between the cranial index calculated from measurements taken on the living and from skulls. Whereas the former (ten in number) average 78 and show a minimum of 73 and a maximum of 83, the average cephalic index of seven Koiari skulls collected in the neighbourhood of Port Moresby is 70, with a minimum of 67 and a maximum of 73. The crania in question include three skulls collected by the Daniels Expedition on the road to Wariratta. But it must be remembered that most, if not all, these skulls have been collected within 20 miles of Port Moresby, while some of the living subjects measured certainly come from further inland, whence no skulls have been collected if we except the single Kokoda skull already referred to with a cephalic index of 77 collected by Captain Barton from the neighbourhood of Mount Victoria which may, it appears to me, be attached to this group.

Passing eastwards in the mountains and keeping roughly parallel with the coast, information is lacking until the mountains behind Mekeo are reached. Here are found two physically similar groups, the Kuni and Kamaweka, who speak two perfectly distinct languages, the Kuni a Melanesian and the Kamaweka a Papuan language. Both are predominantly mesocephalic (average 78) though brachycephals occur in both groups, and both are short, averaging 1542 millimetres (60½ inches) and 1487 millimetres (58½ inches). The latter is the average given by 11 Kamaweka, the extremes being 1378 millimetres and 1625 millimetres, only one man exceeding 1675 millimetres (62 inches). The Kamaweka are distinctly darker skinned than the folk inhabiting the broad

† Not to be confused with Seramine in the mountains in the vicinity of the "Gap" behind Port Moresby.

plain of the Angabunga and the coastal regions, while, unlike these, as far as my limited experience goes, they have invariably frizzly hair. While the men of both groups wear the ordinary perineal bandage which in New Guinea is spread over so wide an area, their women, instead of the equally common petticoat, wear only a perineal bandage similar to that of the men but without the long pendant behind, commonly worn by men. The average of four male crania collected from the club-house at Inavorene, a Kamaweka village, is 77, the extremes being 74 and 80, thus agreeing closely with the cephalic index of the living Kamaweka.

PAPUO-MELANESIANS.

The general characteristics of the south-eastern Papuo-Melanesian have already been alluded to, but I may remind you that typically he is short and lightly built, of a *café-au-lait* to bronze colour, and although wavy hair occurs this is rare. Sociologically the group is characterised by the possession of a well-developed system of totemism with descent in the female line of property and totems—in fact, by being still in the mother-right stage. Cannibalism, except where it has been stopped by Government influence, is rife throughout the district and is here especially interesting because, although human flesh was “sweeter” even than pig, the social restrictions as to those whom a given clan might invite to eat human flesh were as strict as, and in fact complementary to, their marriage restrictions. The marriage restrictions approach nearer to the Australian type than any other known in New Guinea, in Milne Bay there being a dual grouping of the clans with the usual phratry exogamy. On the cultural side this people excel in wood carving, while in the Marshall Bennet group and the Woodlarks large sea-going built-up canoes, 50 feet long, are built.

Broadly speaking, the Massim Papuo-Melanesian is dolichocephalic with a tendency to mesaticephaly which becomes especially obvious in measurements taken on the living. As far as our present knowledge extends, a varying number of brachycephals occur everywhere throughout this area, though the proportion of brachycephals may be locally very small. Here and there individuals with wavy or curly hair occur, though these are far from common, except in the Trobriands and Marshall Bennet group. The inhabitants of the d'Entrecasteaux group composed of the three big islands of Goodenough, Fergusson, and Normanby appear to be the most dolichocephalic of the south-eastern folk. Sergi has examined 118 skulls collected by Loria from Dawson Straits—i.e., presumably the villages fringing the straits between Fergusson and Goodenough. Of 118 skulls of both sexes 93 (78·8 per cent.) are dolichocephalic, 22 (18·6 per cent.) are mesocephalic, and only three (2·6 per cent.) brachycephalic. Considering the difference in numbers this proportion agrees pretty well with the figures given by a series of 34 skulls measured by Dr. Duckworth with an average cephalic index of 73 collected by the Daniels expedition from a cave at Awaiama in Chads Bay. This cave was said to be the depository of skulls brought over from Goodenough or Fergusson, though it is just possible, although very unlikely, that the skulls are, in fact, those of the inhabitants of Chads Bay or the coastal Taupota villages just east of it. 31 of these skulls (91 per cent.) are dolichocephalic and three (9 per cent.) are mesaticephalic. The average cephalic index of eight Goodenough natives is 75, so that if the two units usually deducted from living cephalic indices to make them comparable with skull indices be subtracted here the living and skull averages give identical figures. With the average cephalic indices of 77 and 76 respectively of the Fergusson and Normanby men, the correspondence, though not so close, is sufficiently striking. These d'Entrecasteaux natives were the shortest we met in New Guinea. Two out of 11 Fergusson men measured were under 1470 millimetres—i.e., considerably under 58 inches—while the average of the whole 11 men was 1530 millimetres (about 60½ inches). While the average stature of five Normanby natives was only 1547 millimetres (under 61 inches) seven Goodenough natives were taller, averaging 1588 millimetres (about 62½ inches). (Fig. 9)

The coastal and bush folk of Bartle Bay in Goodenough Bay present as a rule very much the same appearance and physical characters as the Goodenough or Normanby men, but, as far as the small number examined went, tended more to mesaticephaly, while rare individuals among them had altogether finer features, recalling a type by no means uncommon on the Marshall Bennet group.

On the mainland, although dolichocephaly is predominant,

mesaticephaly, and even brachycephaly, are not rare. Waga-waga lies almost at the head of Milne Bay. Of ten Waga-waga men measured with an average cephalic index of 74, one was brachycephalic. Similarly, of ten skulls from Milne Bay giving an average cephalic index of 73, nine are dolichocephalic and one brachycephalic, with an index of 82. Much the same condition of things appears to prevail in the neighbourhood of East Cape, where five skulls from Lydia Island, including one brachycephal, gave an average index of 74. Practically nothing is known concerning the folk in the mountains behind Milne Bay, but of the only two men from Buhutu (which appears to be a general name for that mountainous country) seen and measured, one was

FIG. 9.



A Papuo-Melanesian from Goodenough Bay.

dolichocephalic and the other a brachycephal. Brachycephaly is also met with in the neighbourhood of South Cape, where the average of seven skulls had risen to 76 (minimum 71, maximum 81), while the only man measured from this neighbourhood had a cephalic index of 84.

The inhabitants of Tubetube in the Engineer group, situated about halfway between Milne Bay and the Louisiades, allege that they originally came from the eastern end of Duau (Normanby), whose inhabitants in a general way they resemble. The average cephalic index of ten natives measured was 74 (extremes 71 and 75) and their average stature 1555 millimetres (61 inches).

Passing east beyond the Engineer group, in which is situated Tubetube, to the Louisiades there appears to be a general rise in the cephalic index of the living. The average of nine men, only one of whom was dolichocephalic while three were brachycephalic, was 79. This raising of the index is not so clear in the few skulls accessible, but occurs nevertheless, since of six skulls from this group in the British Museum giving an average cephalic index of 74 (minimum 69, maximum 77), four skulls are dolicho- and two mesaticephalic.

I can unfortunately give no measurements of the inhabitants of Yela, Rossel Island, the most easterly island of the Louisiades. Mr. Ray informs me that their language shows no trace of Melanesian.

Papuo-Melanesian tribes extend westward of Bartle Bay along the coast as far as the northerly side of the base of the Cape Vogel peninsula. Here, as already stated, a Papuan folk, whose tribal name, according to Mr. Giblin, is Pema, occupy the coast for some 20 to 30 miles. From their western border to the Cape Nelson peninsula the coast line is inhabited by scattered sections of two stocks, the Olan and Kuberi, both apparently Papuo-Melanesian, between whose eastern and western settlements is the country of the Maisin; these latter are said to be taller than their neighbours. Mr. Giblin states that the language of the

Malsin is Melanesian but has little in common with other known New Guinea dialects, while he fancies he can detect a small Papuan element in the vocabulary. The only Kuberian man seen or measured was a dolichocephal with a cephalic index of 69 and a stature of 1600 millimetres (53 inches). On the Cape Nelson peninsula itself Mr. Griblin states that a single Papuan-Melanesian tribe, the Arifamu, who say that they came from the south, have obtained a foothold. This tribe, as has already been noted, assisted the Korani in withstanding the western advance of the more eastern Binandere-speaking tribes.

Three Clinical Lectures

ON

THE "ACUTE ABDOMEN."

Delivered at St. Thomas's Hospital

By WILLIAM HENRY BATTLE, F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL.

LECTURE III.¹

Delivered on Jan. 18th, 1906.

GENTLEMEN,—In the last lecture perforations of the digestive tract which are of a simple character were considered as affecting the stomach and small intestine. I now desire to draw your attention to perforations of the large intestine which are occasionally met with in practice and which are the result of the giving way suddenly or slowly of what are known as "stercoral" ulcers.

STERCORAL ULCERS.

As recently as 1896 the late Mr. Greig Smith wrote about stercoral ulcer: "Although no special description of this disease has, so far as the writer knows, been written; and although it is not of frequent occurrence nor of great importance, yet its undoubted existence and real gravity may justify its being classed under a separate heading." He then mentions a few instances of intra-abdominal abscess in which a foreign body was found but admits that some of them were most probably due to disease of the appendix. He writes: "The condition as I have met with it is simply a diffuse subperitoneal cellulitis"—and he evidently regarded it as always dependent on the irritation of a foreign body. Some of the abscesses that I have met with on the right side of the abdomen may have been of this mode of origin, but I am inclined to think they were mostly secondary to perforations of the appendix.

Mr. J. Bland-Sutton² has given examples of faecal abscess associated with small but sharp foreign bodies in the large intestine, and Dr. H. D. Rolleston,³ in a paper on Pericolicitis Sinistra, gives instances in which ulceration developed in a diverticulum of the colon and produced suppuration beyond. These ulcerations were rightly called stercoral and were not secondary to any obstruction of the bowel below.

But beyond these groups of cases stercoral ulcers behave very much as ulcers in other parts of the digestive tract; they may perforate suddenly and produce general peritonitis or gradually and give rise to a localised intraperitoneal abscess. When it is remembered that these ulcerations are usually secondary to a condition which of itself is seriously threatening the patient's life it can be appreciated how very fatal they prove. The patient, who is most frequently suffering from chronic intestinal obstruction caused by carcinoma of the large intestine low down, appears to have his last chance of recovery taken away if a stercoral ulcer perforating suddenly floods the peritoneum with the very septic contents of the bowel above the obstruction. In a patient already weakened and distressed by the obstruction this additional attack is usually more than can be successfully combated and proves fatal. When anyone the subject of chronic intestinal obstruction of a mechanical kind complains of sudden increase in abdominal pain and has a rise of temperature, not necessarily a very high one, the

possibility of the giving way of a stercoral ulcer must be remembered. This possibility is increased if there is in addition an excessive sensitiveness to palpation, previously absent, but perforation may give no immediate sign of its occurrence, as in the following instance. Some years ago I was asked by Mr. C. Mortimer Lewis, then of Steyning, to see a lady with him who had carcinoma of the rectum. She was over 80 years of age and had only sent for him that morning because her bowels had not acted for a week. He examined the abdomen, found it much distended and tympanitic, whilst the rectum was completely blocked by a carcinomatous growth. When we saw her together a few hours later she was much the same, but without any vomiting. Her temperature had been 100° F., the pulse was good, and the tongue was brown and dry. Incision was made to perform colotomy in the left iliac region, but when the peritoneum was opened it was found to have been flooded with black liquid faecal matter which was still escaping freely from two ragged openings in the immensely distended sigmoid flexure. These openings (with thin and irregular edges) were situated one above the other in the anterior part of the bowel which passed down behind the middle line of the abdomen. Flats of this offensive fluid came away before it was possible to secure the sigmoid flexure to the abdominal wall. The peritoneum was cleansed as well as possible but the patient did not rally from the operation. In this case it is possible that the bowel had given way in the morning when the patient sent for her medical adviser. Up to that time she had for some days gone on taking dose after dose of medicine without relief, whilst the immense accumulation of faecal matter above the constriction had caused excessive stretching and local injury to an area of the bowel which had ended in acute bacterial necrosis. The necessary movement from the bed to the operating table may have caused a further escape and diffusion in the peritoneum.

Treatment of this most unfortunate complication should be directed, as in this case, to the cleansing of the peritoneum, the insertion of a Paul's tube in the opening from which the faecal matter is escaping, and the securing of the damaged bowel to the part of the abdominal wall most easily reached. Strain on the wall of the bowel, usually softened and easily torn, must be avoided. By this means the opening will serve as a colotomy opening and the obstruction will be relieved. Even then the difficulty in cleansing satisfactorily the fouled peritoneum will render the prospect of recovery doubtful. Yet success may occasionally be attained.

On March 27th, 1901, I saw a patient in consultation with Dr. S. Faulconer Wright of Lee. He was 71 years of age and stated that he had always been healthy until the 21st of that month when for the first time he experienced abdominal pain. This was accompanied by vomiting and constipation. Since that time the pain had continued with occasional vomiting and the bowels had not acted. The abdomen was much distended and tympanitic, the note around the umbilicus being high-pitched. There were no diminution of the liver dulness and no evidence of free fluid in the peritoneum. The tenderness was not extreme but he winced perceptibly when touched. His general condition was fair and the temperature was normal. An incision was made in the middle line below the umbilicus and when the peritoneum was opened free gas escaped and fluid faecal matter was seen covering the intestine in the region of the caecum and extending into the pelvis. This had come, and was still escaping, from a stercoral ulcer on the anterior surface of the distended caecum which had recently given way. It was large enough to admit the little finger and its outline was somewhat irregular with thinned edge. Into this a Paul's tube was passed and secured, the caecum being sutured to an incision in the right iliac region. After the bowel and peritoneum had been cleansed as thoroughly as possible a long drainage-tube was passed into the pelvis and the median wound was sutured. The small intestine was generally adherent, coil to coil, and fixed in the posterior part of the abdomen, evidently the result of an old attack of peritonitis (probably chronic). Under the skillful management of Dr. Wright the patient recovered and is still able to go daily to the City to business. The time has gone on this opening has become more important until at the present time hardly any faecal matter finds its exit by the natural anus. The patient wears a flat, circular indiarubber bag containing a large flat sponge and fitting accurately to the abdomen over the artificial anus. This is

¹ Lectures I. and II. were published in THE LANCET of Jan. 27th (p. 201) and Feb. 3rd, 1905 (p. 273).

² THE LANCET, Oct. 24th, 1903, p. 1123.

³ THE LANCET, April 1st, 1905, p. 654.

necessary. The dieting has to be very carefully arranged on account of occasional stoppages which, when they occur, cause considerable pain that is only relieved by the escape of fecal matter by the artificial opening. His general health has remained excellent.

What the nature of the obstruction was in this case it is impossible to say; the fouling of the peritoneum and the condition of the patient made it inadvisable to explore. The complication of perforation was such a serious one that the clear indication was to treat that more especially as its treatment was calculated to give relief to the obstruction which was responsible for it. The cleansing of the peritoneum was no doubt aided by the limitation of the fouled area in consequence of the old intestinal adhesions. The after-history of the case is instructive, inasmuch as the obstruction has often recurred and a "safety-valve" action has permitted of relief on each occasion. It was thought at the time of operation that the obstruction was caused by a carcinoma of the sigmoid flexure, the growth of which is sometimes very slow; anyway, the case is a most instructive and encouraging one.

The surgeon of the present day considers that chronic intestinal obstruction should be rare in actual practice; there must be some neglected cases, but it should not be met with so often in good hands as it is; our knowledge of the early symptoms and of the great possibilities of successful treatment is so much better than it was only a few years ago. However, I am not dealing with that condition to-day in considering the acute abdomen; for although a chronic obstruction may become acute the diagnosis is usually easily made and the indications for treatment are usually straightforward.

"Stereocoral ulcer" is one of the most serious complications of chronic intestinal obstruction, even when the peritonitis produced is purely local in its character. In any adult with a history of chronic constipation who gives an account of a more recent attack of pain, usually in the right side of the abdomen, which has been followed by a rise of temperature, examination should be made for the signs of localised extravasation of fecal matter into the peritoneum. If there is an ill-defined area of dullness in the cæcal region, with tenderness and a sense of resistance, whilst rectal examination shows an apparent thickening on the right side of the pelvis, this complication should be suspected. Fluctuation may be found if the case is seen at a later stage. Should the patient be fat and nervous the diagnosis may be very difficult; even with assistance afforded by the administration of an anæsthetic it may be hard to say that there is much wrong with the side really affected. There is nothing like the definite induration which is found in a case of localised inflammation or supuration secondary to a disease of the appendix which it resembles closely in some other respects. It comes on in a person suffering from intestinal disturbance; the pain is in the right iliac fossa and is accompanied by increased distension of the abdomen and a rise of temperature. Tenderness is more marked in the right iliac fossa than in other parts of the abdomen. Yet there are differences—stereocoral ulcer giving rise to a localised extravasation and abscess is especially met with in elderly females who give a history of chronic constipation, recently more obstinate and associated with "wind in the stomach." The rise of temperature is not great and the area of tenderness is not so easily localised as in appendicitis.

The collection of feces which forms has a tendency to spread laterally, and it may be the operator will find it up to or beyond the middle line should he make an exploratory median incision to find out the exact site of the obstructing cause when there is a doubt. Whether he thus discovers it by accident or makes direct and intentional incision into the abscess a counter opening will be usually required and the insertion of a large drainage-tube. If the opening into the cæcum be found a tube should be passed into this so that the contents of the bowel which will escape freely may be conducted beyond the abscess cavity. The contents of the abscess cavity, pus mixed with fluid fecal matter, are extremely offensive, more so than most abdominal collections of a purulent character, and that is saying a great deal.

Under the best conditions the prognosis is bad, the discharge of large quantities of fecal matter with an increasing admixture of pus causes much local irritation, and may end in rapid exhaustion. Should the parts quiet down and an artificial anus form it is not placed in a convenient position and may lead to all the disadvantages of

a colotomy opening on the right side, that is if the obstruction becomes complete. The case under the care of Dr. Wright suggests the possibility of a more satisfactory course of events, the opening acting as a safety valve when required by the temporary stoppage beyond and causing but little inconvenience in the intervals. Another danger in these perforations is the tracking upwards of the pus and the formation of a large collection in the subhepatic or subphrenic regions; a second incision would be required for the better drainage of this extension but exhaustion from the discharge would not unlikely be the ultimate ending of the case. It will be evident that recovery from these collections will take some time, during which the original cause of the trouble—probably a malignant growth—is increasing in size and becoming more difficult to treat satisfactorily.

In the description of the various cases of perforation already given the treatment will be found which was successful in bringing about the desired result, but there are one or two things which require attention. Firstly, as regards the method of cleansing the peritoneum, especially in cases of early peritonitis associated with appendix disease. The important investigations of Mr. L. S. Dudgeon and Mr. Percy W. G. Sargent on the bacteriology of peritonitis have given such evidence as to the condition of the peritoneum that few can doubt that the method of dry sponging is the one which should be generally accepted as the right one. This method of dry sponging must, however, be carried out with gentleness, for it must not be forgotten that it is the method which is employed with the object of inducing the formation of adhesions in cases of portal obstruction. Undoubtedly many cases have recovered after careful flushing with warm saline fluid and others will do in the future, but the strong arguments against this treatment are thus summed up by them: "Limited operations should be the rule, because of the mechanical impossibility of cleansing the peritoneum, the risk of washing away the phagocytes in the exudate beyond the area of most intense inflammation, and the danger of spreading infection over unaffected regions." When the peritonitis is general, or nearly so, or when it is necessary to cleanse the peritoneal cavity from the pus of a ruptured abscess or the contents of the stomach or large intestine, then flushing will be found most useful, whilst occasionally wet sponging will appear to be clearly indicated as the only means of getting rid of the foreign substances.

Drainage should be the rule in all cases of peritonitis when there is pus at the time of operation. In early cases of stomach perforation and perforations of the small bowel it may be possible to close the wound at the end of the operation and without drainage, but there will frequently be cases in which this would be a very injudicious procedure. I do not think that I have ever regretted the decision to employ drainage in the after-treatment of cases in this group.

INTESTINAL OBSTRUCTION.

In the calculation of the percentages of causation of "the acute abdomen" it is found⁴ that acute obstruction is responsible for no less than 24 per cent., without including the cases of intussusception, which of themselves constitute 16 per cent. The forms of acute obstruction which are most common, and therefore most likely to be confused with some of the varieties of peritonitis due to perforation of the hollow viscera, are those caused by the action of various forms of bands. Here the resemblance may be very marked, whether the obstruction is incomplete or whether it is complete and the strangulation of bowel absolute. The cases of incompletely strangulated bowel may closely resemble some of the more insidious forms of peritonitis due to perforation or gangrene of the appendix. There may be a history of previous attacks of abdominal pain and perhaps an exudation of free fluid into the peritoneum, with localised tenderness. The temperature record is important, as is also the mode of onset of the attack, a rise of temperature, and maybe an initial rigor, being much in favour of the purely inflammatory nature of the illness. "Peritonism" (Gübler), abdominal pain, shock, vomiting, &c., are such as described in the cases of perforation of ulcers of the digestive tract, and the same careful examination of the abdomen and consideration of symptoms will be required. The character of the pain is of little value but it is usually much increased by percussion (even when quite gently performed) in peritonitis, more so than by palpation.

⁴ Dudgeon and Sargent: *The Bacteriology of Peritonitis*, p. 165.
⁵ Battle and Corner: *Loc. cit.*

In obstruction percussion is always painless, whilst palpation is more often painful. The abdomen in peritonitis is immobile and rigid, whilst in obstruction it is mobile and soft. Vermicular movements are more commonly seen in obstruction but may be found in localised diffuse peritonitis as in the two cases of perforated simple ulcer of the jejunum described in a former lecture.

In the severely toxic form, or the last stages of peritonitis, the abdominal wall, previously rigid, becomes soft and pliable again. As a rule, in the perforations leading to peritonitis the patient lies quiet with flexed thighs; in obstruction he moves about in bed, altering his position to that which appears for the moment to be most comfortable, and complains of gripping pain. In all a careful search should be made for abnormal swelling which in acute obstruction may be found in various parts of the abdomen. As the case progresses general distension of the abdomen increases and any localised swelling will be gradually merged in the general enlargement. Septic absorption and inflammation are super-added and the case becomes practically one of peritonitis of the most grave nature. If seen for the first time at this stage a diagnosis of the exact cause of the inflammation is impossible but prompt measures may yet prevent a fatal termination. Luckily patients do not often permit things to progress to this stage before applying for relief.

It would be obviously impossible to enter fully into all the varieties of acute obstruction which come under the heading of "the acute abdomen." I have selected two which I think are most instructive and have the added advantage of having been under your observation. They represent the typically acute type of obstruction in which there must be no attempt at medical compromise; operation is imperative and must be performed as soon as possible, otherwise the condition passes rapidly beyond the power of relief.

The patient, who is shown you to-day, looking in good health and expressing himself as feeling so, was under treatment here some months ago for volvulus of the small intestine, for which it was necessary to do an extensive resection. The portion of bowel involved was the lower part of the ileum, which is the usual part affected, and the twist was from right to left on the mesenteric axis.

A man, aged 28 years, was admitted to St. Thomas's Hospital on Nov. 7th, 1904, with acute intestinal obstruction. At 4 P.M. on the day before admission he was suddenly seized with pain in the lower abdomen; since that time his bowels had not been open, neither had he passed flatus. There had been vomiting off and on since the onset. The pain had been continuous in character, with paroxysms. On admission it was stated, "The patient's face is drawn with pain, he continually moans and pants. He complains of pain in the abdomen. The abdomen does not move at all in its lower part during inspiration, and movement is poor in the upper part. There is a marked prominence in the hypogastric region in the middle line, looking like a much distended bladder. The percussion note over this tumour is resonant and it is very tender. The liver dulness is not diminished and the abdomen appears to be normal in other parts." The pulse was 120 and the temperature was 100.6° F. Catheterism did not diminish the size of the swelling. When seen with Dr. C. R. Box, under whose care the man was, the local signs had become less acute and there was less complaint of pain. Acute intestinal obstruction was diagnosed, due to volvulus of small intestine or strangulation by a band. The patient was a strong, healthy-looking man without any history of previous abdominal attack.

At 5.45 the abdomen was opened below the umbilicus to the right of the middle line, the rectus being displaced outwards. When the peritoneum was incised a very black coil of small intestine presented; this was very tense and hard and could not be drawn up through the wound. It was therefore punctured and a quantity of fluid, which consisted almost entirely of venous blood, escaped; this had a fecal odour. This coil was then brought outside and found to be the ileum immediately before its junction with the caecum. Another coil then presented itself and was also tapped and emptied of similar fluid contents and flatus; it was now possible to lift the whole of the affected gut out of the abdomen. The portion affected was quite black and when emptied of its contents was without resiliency, although the peritoneal covering was not without polish. The twist which had occurred was one on the mesenteric axis from right to left, but when this had been reduced no improvement occurred in the circulation of the affected portion of small

intestine; it was necessary, therefore, to resect the whole of this and to include an inch or two beyond. Altogether 43 inches of gut were removed from close to the ileo-caecal valve upwards, Doyen's clamps being placed on the bowel above and below and the mesentery ligatured after the rapid application of artery forceps to each section before it was divided. The upper end was then joined to the part left at the ileo-caecal opening with two rows of sutures, continuous, involving all the coats, and a continuous "Lembert" outside that. The upper part of the divided mesentery was also sutured. The pelvis contained dark, blood-stained offensive fluid. There was no lymph present on any part of the peritoneum that came under observation. After washing out the pelvis and cleansing the parts involved in the operation with sterilised saline solution the wound was closed with deep and superficial sutures. Chloroform was administered and during the operation two injections of five minims of liquor strychninae were given hypodermically and, later, 15 ounces of saline solution per rectum. The operation was well borne.

Beyond the fact that a localised abscess, probably due to bacillus coli infection, formed in the wound and discharged a fortnight after the operation, there was nothing of moment to record in the after progress of the case. Rectal feeding was employed for three days. You can see that there is now a good abdominal wall without hernial protrusion. We had in this case a formidable complication, gangrene of the gut, one which required very prompt measures in dealing with it. Not many hours had elapsed since the onset of obstruction but the strangulation of bowel had been absolute.

Dr. C. L. Gibson⁶ of New York collected 1000 cases of intestinal obstruction (including 354 of strangulated hernia) and amongst these were 121 cases of volvulus. These were taken from various medical publications and included those affecting the large intestine, which are by far the most common, constituting practically the only form of acute obstruction of the large bowel. This form of obstruction when affecting the large intestine has a mortality of 46 per cent. When affecting the small intestine the death-rate is 70 per cent.⁷ This is accounted for by the fact that the small gut is of far greater importance, whilst the vitality of its walls is probably less. When the small intestine is the subject of volvulus there are greater acuteness and manifestation of shock and possibly its mobility allows of a tighter twist. Knowing the great tendency there is to publish only successful cases it is very probable that Dr. Gibson's statistics⁸ are more favourable than they should be. He found only one record of successful resection for gangrene due to volvulus of small intestine and this was performed by Riedel on the second day of obstruction.

A somewhat similar condition is presented by a case of obstruction by a Meckel's diverticulum, the symptoms of which are practically those produced by any kind of band. There is less frequently a history to guide you as to the actual cause of the obstruction in these cases; no account being given of a previous inflammatory attack or of injury, although you may at times hear of occasional "stomach-aches." Gibson⁹ gives 42 cases of obstruction by Meckel's diverticulum, as against 166 by bands of various other kinds. This seems to me to be much too high a proportion as compared with actual practice; obstruction due to a Meckel's diverticulum is not a common variety.

The symptoms produced by the compression of small intestine by a band are practically the same¹⁰ as those described when the cause is a twist—peritonism—with the formation of a localised swelling in the lower abdomen, which swelling is resonant on percussion. Any swelling of this kind should be regarded as of the utmost importance and as an indication that nothing but operative treatment is possible. This must be at once declared by the surgeon in charge. The friends will very possibly protest and the patient demand morphine for the relief of his pain, but you must be firm.

At the time of the operation the diagnosis in this case was already becoming difficult, the localised swelling having merged in the general swelling caused by the distended intestines. You should always have operations performed before general distension sets in; in all cases the operation is much more difficult in the face of distension and the result is likely to be so much less satisfactory.

⁶ Annals of Surgery, vol. II., p. 438, 1899.

⁷ Loc. cit.

⁸ Collected from publications during the years 1833-1892.

⁹ Loc. cit.

¹⁰ Indeed, the two conditions may be combined. See Dr. Hector W. G. Mackenzie, Transactions of the Pathological Society, 1890, p. 127.

A man, aged 46 years, was admitted under the care of Dr. Hector Mackenzie on Feb. 26th, 1905, with acute intestinal symptoms of 12 hours' duration. 12 hours before admission he awoke feeling out of sorts and had a headache. Acute pain soon came on in the region of the umbilicus and he vomited three times in the course of half an hour. The bowels had not acted for two days. On admission he was found to be a heavily built man with a tendency to obesity and was obviously enduring very severe pain, which was not relieved by any change of position. The abdomen was not uniformly distended but there was an obvious rounded swelling in the right iliac fossa. The respiratory movement was poor in the right lower segment of the abdomen. The greatest tenderness was immediately around the umbilicus and the right rectus was the more rigid of the two, whilst a distinct swelling could be defined just below, and to the right of, the umbilicus. The resonance was everywhere normal, there being no sign of free fluid. The pulse was 62 and the temperature was 98° F. During the night the pulse quickened considerably and the temperature commenced to rise. At 10 P.M. two enemata were given without result. Hot fomentations and morphine did not fully relieve the abdominal pain. In the morning the temperature was 100·6° and the pulse was 110, and the abdomen was much distended. Dr. Mackenzie was asked to see the patient at 2 P.M. and advised immediate operation, considering the case one of strangulation by hand!

At the operation it was found that the cause of the obstruction was the pressure of a Meckel's diverticulum across a large amount of small intestine. The extremity of the diverticulum was firmly adherent to the mesentery and the coils of gut involved were of a chocolate colour and without any resiliency. The mesentery was partly filled with extravasated blood and the vessels were without pulsation; the strangulation had been complete. The diverticulum was divided and most of it removed, the stump being sutured into the side of the gut. About four inches above this a section was made of the gut where it appeared to be healthy and another above the gangrenous part. Altogether 46 inches were removed, an end-to-end anastomosis being effected with two continuous sutures. The peritoneum was cleansed from a small amount of blood-stained, foul-smelling fluid and the wound closed. Remedies were applied to diminish shock. Both lines of suture gave way, the sutures having apparently been placed in damaged bowel; an attempt to close these was unsuccessful and the patient died on March 9th from exhaustion and localised peritonitis. The diverticulum had had its origin eight inches from the ileo-cæcal valve.

In both these cases the progress of events was rapid, the strangulated gut having become gangrenous in a few hours from the onset of symptoms. In dealing with the cause of the obstruction, in the first case it was only necessary to empty the involved intestine and after drawing it from the abdomen twist it round in the required direction. In the second, after the band had been found (not always an easy thing, if one may judge by recorded cases) it required to be divided and the ends afterwards dealt with. I may here remind you of the necessity of examining carefully any band that may be divided during the progress of an operation for intestinal obstruction. I have known the careless division of a Meckel's diverticulum result in a rapidly fatal peritonitis; when other things in the case were favourable to the recovery of the patient the contents of the bowel escaped through the divided open end of the diverticulum and caused a fatal peritonitis. In the appendix cases we are able to excise the diseased part without interfering with the lumen of the bowel; in the perforations of the digestive tract we did not seriously alter the size of the lumen by our sutures. In this group of cases we are met by a very formidable complication which requires special consideration. More or less extensive gangrene of the intestine may suddenly confront you in any acute abdominal case in which operation is performed and you must be able to deal with it on the spot. There will be no time to send a special messenger for button, bobbin, special forceps, or any one of the scores of suggested mechanical aids on which you may have decided to pin your faith in the presence of this complication—you must deal with things as they are at once if you wish to save the life of the patient. The faith which was formerly placed in the special instrument should now be placed in an accurate method of suturing, the judicious selection of the point of section of the gut, and in the precautions against sepsis which you have been taught how to take.

There are many cases of localised gangrene in which it is found that a portion of the gut does not look sound but of which it is not possible to say that it will not recover if placed in favourable circumstances. When the portion of bowel affected is very localised, as when the pressure of the band has produced a transverse lesion, it may be possible to invert this by a row of Lembert's sutures, as suggested by Caird. This you have seen done recently with success.

The treatment of gangrene of the small intestine when the entire circumference is affected will depend on the general condition of the patient and the circumstances of the case, rather than on the extent of the gangrene, for the procedure will be much the same whether you resect one inch or one yard. In favourable circumstances this will be that adopted in the case of volvulus: delivery of the gangrenous part from the abdominal cavity, examination to define the extent of bowel, not only gangrenous but affected beyond this, cleansing of the part, careful packing off of the healthy area with sterilised gauze, covering of the gangrenous part with gauze to prevent possible contamination of the wound, resection, and subsequent joining of the ends.

In the resection of the gut in both cases which I have recorded Doyen's clamps were used and answered their purpose well. I used them because they were handy. In other cases of resection I have used pieces of drainage tube with equal success passed through the mesentery and secured by tying or by forceps. Strips of gauze would answer in case you had no drainage-tube available. The proximal and distal clamps should be placed two inches above or below the line of proposed section in a healthy part. I lay very special stress on this point because in the case of obstruction by a Meckel's diverticulum it is quite evident that the suturing failed because the sutures could not hold in tissue which had been stretched and which underwent afterwards an inflammatory reaction and softening. The bowel appeared to be quite healthy at the time and one was very naturally not anxious to excise more than was absolutely necessary. It is sometimes advisable to cut the bowel a long distance away; for instance, in January, 1905, I resected 16 inches of small intestine in a case of strangulated femoral hernia, although the part affected by gangrene was only about one inch in length. The bowel close to this was not in a healthy state. As each end of the bowel is separated it should be cleaned and wrapped in gauze until wanted. One or two vessels may require ligation. You need not excise a wedge-shaped portion of the mesentery but if it is full of thrombosed vessels there is no object in cutting close to the part to be resected.

The junction of the two ends should be made by careful suturing with a double row of silk sutures. These should be continuous, for they are more rapidly applied than the interrupted and are equally efficient. According to the thickness of the intestinal wall should be the size of the suture; as a rule, No. 1 is right for the adult. The first should include all the coats of the bowel; the second will take only the two outer as a rule. In applying this you must see that the suture has a good hold; if you are satisfied on this point it is not advisable to dip the needle too deeply, for if you pass your outer thread into the lumen of the bowel in the endeavour to get a supposedly stronger hold your patient will probably do badly. When applying the deeper stitch hold the two portions of bowel with forceps, one pair applied at the mesenteric point of attachment of each half, the other to a corresponding point opposite; if a pair of forceps is also placed half-way between these also closely applying the cut edges the suture can be introduced still more rapidly. The omentum should then be sutured so as to present no raw surface to which adhesions can form, the parts involved in the operation cleansed, and the abdominal wound closed without drainage.

The amount of intestine resected in these cases appears large, 43 inches in one case and 46 in the other, but larger amounts have been excised. Mr. A. E. J. Barker,¹¹ in a very instructive paper on the limitations of enterectomy, mentions a case in which Mr. Hayes of Dublin successfully excised 8 feet 4½ inches of intestine for injury, in a boy, aged ten years. Another paper by Mr. Barker will repay perusal; it is on enterectomy for gangrenous hernia.¹² Many practical points are brought out. He also shows that the amount of shock is much less than you might think from such an extensive operation. I have mentioned these large amounts

¹¹ THE LANCET, April 27th, 1901, p. 1186.

¹² THE LANCET, May 30th (p. 1495) and June 6th, 1903 (p. 1576).

of excised gut to show what can be done so that you may not be intimidated should you meet with one of these extreme cases, remembering that if the gut at the point of union is sound and you take proper precautions in following the various steps of the operation, you may hope for a success even in desperate circumstances. (The method of operation was demonstrated.)

The effect on the patient of the removal of a large portion of the small intestine is apparently very slight; in the former of the two cases which I have just given details of there was for a time a tendency to looseness of the bowels, but this has passed off and he is now in good health excepting for occasional "indigestion." The effect on the intestine has been recorded by Mr. Barker in two cases in which he had an opportunity of looking at the bowel during life some months (in one case five years) after operation. In both the line of union was sound and without contraction, but the bowel on the proximal side was somewhat larger than that on the distal side and showed smaller power of muscular contraction.

A LARGE TERATOMA OF THE NECK SUCCESSFULLY REMOVED FROM AN INFANT THREE WEEKS OLD.

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With a *Pathological Report* by CHARLES WORKMAN,
M.D.R.C.U.I., F.F.P.S. Glasg., *Pathologist, Glasgow
Royal Infirmary.*

TERATOMATA of the neck are of comparatively rare occurrence and those containing solid matter in the shape of tissues of varied origin are perhaps the rarest of all. In the absence of a previous recorded case it may be claimed for the one now submitted that it is the first in this country to have been successfully removed during life. Whether the lack of reports of operation cases is due to a general belief that these growths are so intimately connected with the individual as to be inoperable, or are confounded with simple congenital cysts (hydrocele) of the neck, is a matter for speculation. It is nevertheless true that in this case some surgeons considered the tumour inoperable. For various reasons, to be detailed later, the operation was performed and the result was sufficient to warrant the undertaking. The case was shown, along with the pathological specimen and sections, a plaster cast, and photographs, to the Pathological and Clinical Society of Glasgow, and Dr. Workman has prepared some excellent micro-photographs and photographs of the cast, as illustrations to this paper, in addition to the pathological report.

The use of the word teratoma (Virchow) has been questioned in connexion with this case inasmuch as it is restricted by some to cases where there is inclusion of another foetus, or part of one, or to fission of the parts of an embryo (Cleland), but Ballantyne¹ classifies congenital tumours into discomata and monocomata tumours, and of the latter variety this case falls within the category of the subsection "c" described in that excellent classification among branchial anomalies.

The diagnosis of congenital cysts of the neck, particularly of those situated in the upper segment, is frequently that of "hydrocele of the neck" and three main causes of these cysts are enumerated by Bland-Sutton² as (1) those arising in the same plane as the laryngeal sacculi in certain apes; (2) those due to secondary changes in naevi; and (3) some as dilatations of lymphatics. The same author also refers to "smaller cysts in the neighbourhood of the sterno-mastoid due to distension of imperfectly ossified branchial clefts." The case under consideration differed from these in that the cystic growth contained also solid matter, described in the clinical report as of cartilaginous hardness, and afterwards verified by the pathological report. Excluding dermoid cysts and blood tumours, such as venous dilatations, the case therefore seemed to fall under the classification of monocomata terata of the neck and it was not likely to be benefited by drainage of the cyst alone. The possibility of

its being a parathyroid tumour should also be considered in the differential diagnosis. The relatively enormous size of the tumour at birth and its pressure effects, as well as the probability of its continued growth, seemed sufficient warrant for operative interference, though no similar recorded case was found as a precedent.

The patient, a female, aged 15 days, was admitted into the Glasgow Royal Infirmary on August 28th, 1905, with a large tumour of the left side of the neck which had been present at birth. The following family history was obtained. Both parents were living and well. There were two sisters and a brother; the brother died at the age of four and a half months from "peritonitis"; the sisters were alive and well. There were no other abnormalities in the patient nor in any of the other children. The following was the patient's condition on admission. On inspection, as the child lay on her back the tumour seemed to extend from the clavicle upwards to the middle of the cheek and from near the middle line in front to the anterior border of the sterno-

FIG. 1.



Infant on admission.

mastoid muscle posteriorly (Fig. 1). It projected considerably from the level of the jaw and its bulk seemed a little less than the size of a closed fist. The measurement over the tumour from the middle line to the posterior edge of the sterno-mastoid was six and a half inches, as compared with two and a quarter inches on the normal side. The shape of the tumour was roughly oval, the long axis occupying a line from the mid-point between the symphysis and the angle of the jaw, outwards and slightly downwards. There was one marked projection on the anterior inferior aspect: the other irregularities consisted of rounded elevations. Palpation of the mass more clearly defined the shape and limited the inferior margin of its attachment to a point about one inch below the thyroid cartilage; its anterior margin could not be separated from that structure: its posterior border overlapped the anterior edge of the sterno-mastoid muscle in the upper three-quarters of its extent. On the superior aspect it was readily ascertained that the tumour overlapped the lower jaw and was an extension upwards from the neck. Its upper border extended from a point half an inch behind the symphysis menti along a line curving upwards to the inferior edge of the malar bone and downwards to a point midway between the angle of the jaw and the external auditory meatus. The skin was freely moveable over the whole extent of the tumour and was normal in appearance. The tumour itself was fairly moveable for the most part: being pendulous and of considerable weight it moved with alterations in position of the child, and this feature was very marked, inasmuch as the child's breathing became difficult, almost to asphyxia, when she was turned on her right side. Manipulation of the tumour produced noisy breathing and it was noticed that when the child cried the tumour seemed to project outwards and to become more prominent. So far as it was palpable

¹ Teratologia, vol. II, p. 315.
² Tumours, Cassell and Co., p. 223.

the tumour was distinctly encapsuled and the external projection was softly fluctuant. In other parts the consistence was more firmly elastic and one or two rounded elevations were of cartilaginous hardness. In particular, one small tumour, situated within the softer cyst, was independently moveable and felt like a nodule of cartilage. The skin over the prominent part of the growth was very thin and at this point the tumour was translucent. Pressure did not diminish the size of the tumour. Examination of the mouth revealed no abnormality. No other deformities, either of defect or excess, were observed, except perhaps a faint nævus mark at the root of the nose; in particular, the right side of the neck seemed to be normal. There was no difficulty in swallowing and the taking of food had no apparent effect on the size of the tumour. After several unsuccessful attempts some photographs and a cast of the tumour (Fig. 2) were taken while the child was partially anæsthetised.

FIG. 2.



Plaster cast of Infant on admission.

On Sept. 6th the patient (aged 24 days) was put under the influence of chloroform and an incision was made over the tumour in a line parallel to the margin of the lower jaw. The soft cyst was incised and was found to contain some clear and some milky fluid, a small quantity of flaky white matter, a number of cysts, and some solid tissue. The wall of the cyst was rapidly separated from the structures of the neck; on its outer side were the carotid sheath and vessels, and more deeply, and towards the upper margin, two arteries were seen to enter the capsule in a position which suggested branches of the lingual or facial; the veins left, at about the same part of the capsule, in two main trunks. Anteriorly the capsule was separated from the thyroid cartilage and muscle without much difficulty, and the last part to be separated was a fascial attachment to the hyoid bone on its posterior aspect. The vessels passing through the capsule were caught with pressure forceps before being cut, on the removal of the growth the cut ends were ligatured; and, lastly, the wound was sutured by a continuous catgut suture. A catgut drain was inserted. The main difficulty of the operation consisted in the interference with respiration when the tumour was moved towards or away from the middle line, the work being done, literally, between breaths. On the 12th the wound was dressed and the drain was removed. On the 22nd the wound was again dressed; it was quite healed, but as the catgut sutures were still firm the dressing was reapplied. On the 30th most of the catgut sutures were removed, the wound being quite healed. The neck had a peculiar appearance due to the large gap and to the wrinkled state of the loose skin. The child had taken her nourishment and was

thriving well (Fig. 3). On Feb. 1st, 1906 (five months after the operation), the child was seen, when there was no sign of recurrence and with the exception of the redundant skin the neck seemed normal.

Remarks.—The problem presented by this case was that of the feasibility of operative interference. It was perhaps natural for the parents to desire that the growth should be removed at any risk. The presence of the tumour was a constant danger to the life of the child, for its weight was such that in certain positions the breathing was impeded; in others it was stopped. In addition to the risk caused by its weight and bulk, the possibility of its continued growth was a menace to the child's life, for this was apparently not one of the simple cysts which are said to disappear spontaneously. The presence of the hard solid matter was recognised before operation and the pathological report not only confirms the opinion as to the presence of cartilage and other connective tissue elements but indicates that some parts were of a malignant type. On the other hand, the risk of operation was undoubtedly great. The infant of three weeks could ill afford to lose blood. The shock of an operation among the deep structures of the neck, as well as the necessary interference with respiration, were serious factors against success.

The element of time was necessarily a most important point in the operation and it was hoped that as the cyst wall was well defined it might be possible to shell out the tumour throughout the greater part of its extent. This fortunately proved to be the case and the whole operation lasted only 12 minutes, notwithstanding the fact that the work had to be stopped every few seconds to allow the infant to breathe. In order to diminish the duration of the operation and the amount of shock a continuous catgut suture was used and no attempt was made to remove the superfluous skin.

Pathological report by Dr. WORKMAN.—"The tumour from the child, aged three weeks, handed me by Dr. A. N. McGregor is a multilocular cystic mass of about the size of a turkey's egg and of an irregular conical shape. In one or two of the larger cysts there is a solid, very vascular growth which, on cutting into the tumour, bulged out from the cysts. This growth is very soft, while the other parts of the tumour vary greatly in consistence, some parts being of

FIG. 3.



Appearance of neck after healing of wound.

cartilaginous density, but nowhere is the tissue of osseous hardness.

Microscopic sections were prepared by the celloidin method, from the cystic part of the tumour, and also from the intracystic solid growth. The sections were stained with hæmatoxylin and eosin. The cystic part consists of a series of cysts, varying in size from microscopic minuteness to that of a walnut. Some of these cysts are lined with a single layer of cuboidal or rounded cells, with large round or

oval nuclei: some appear to have several layers. Others have the lining membrane thrown into voluminous folds and his membrane is covered with large columnar cells with oval nuclei, which take the hæmatoxylin stain very deeply, while the part of the protoplasm towards the free ends of these cells remains almost unstained. These latter cysts have the characters of dilated gland-ducts and lend an adenomatous appearance to the tumour sections.

The intercystic part of the tumour is of very varied character, containing cartilage, spindle-celled connective tissue, non-striated muscle, arteries, veins and capillaries (see Figs. 4 and 5), and at one part there is an area which

development of one or more of the branchial arches of the embryo."

Note.—The photographs are taken from slides stained in the ordinary way and mounted in Canada balsam. (See Figs. 4, 5, 6, and 7.)

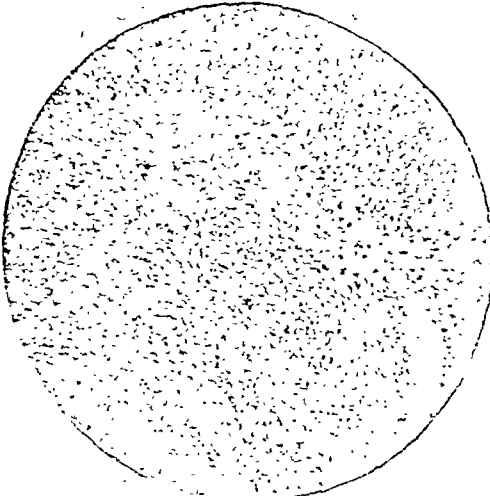
The structure of the tumour, as set forth in Dr. Workman's report, shows it to be not only an error of development but a sarcoma, and this evidence of malignancy seems to me to warrant operative interference. For lack of experience and, in the face of reported cases of simple cysts, one would hesitate to advise surgical interference in all cases; at the same time, it is possible that a large cyst, tense with fluid,

FIG. 4.



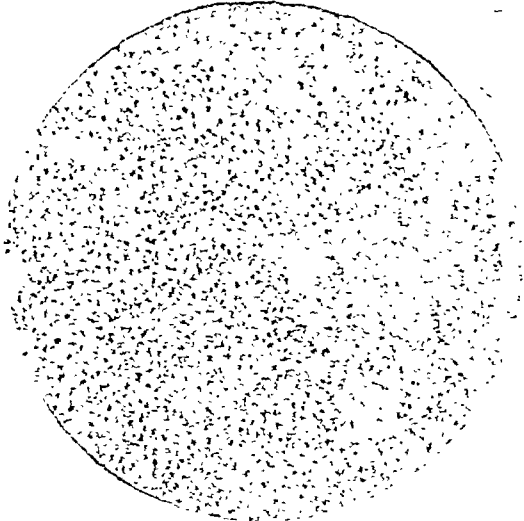
General view of the cystic portion of the tumour, showing various tissues. $\times$ about 50 diameters.

FIG. 5.



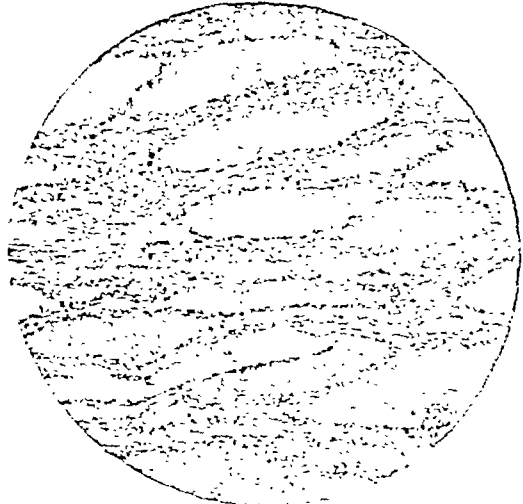
Section of inter-cystic tissues, showing cartilage, fibrous tissue, &c. $\times$ about 350 diameters.

FIG. 6.



Solid round-celled sarcoma-like mass. $\times$ about 350 diameters.

FIG. 7.



Section of the surface part of the solid round-celled sarcoma-like mass, having the character of compressed cysts with single layer of rounded or cubical cells. $\times$ 350 diameters.

shows the character of a capillary angioma. The solid growth which protrudes from one of the cysts has the appearance on section of a round-celled sarcoma (see Fig. 6), the cells being of medium size and having well-marked single round nuclei; towards the surface this part of the tumour is inclosed in a layer of small cysts flattened together and lined with a single layer of rounded cells (see Fig. 7). The whole tumour is of such complicated structure containing both mesoblastic and epiblastic elements, that I consider it has probably originated from an abnormal

might obscure the presence of solid tissues at the base of the growth. An exploratory incision into the main cyst in all cases would not only allow of a thorough examination but would be of great assistance in the radical operation should that be considered possible. In the case here reported the primary opening of the main cyst was of great assistance during the rest of the operation.

In conclusion, I desire to express my indebtedness to that most complete book of classification and reference, Galland's "Teratoma."

Glasgow

A CASE OF PERSISTENT ABERRANT THYMUS.

By E. W. SHARP, M.B., CH.B. GLASG.,

LATE ASSISTANT MEDICAL OFFICER, CITY HOSPITAL, BIRMINGHAM, ETC.

THE patient, a female, aged 24 years, sought advice about a swelling in her neck, which had first been noticed when she was 11 years old, at which time constitutional treatment was tried to reduce it, but it had gradually grown larger and given rise to a marked swelling, situated at the base of the neck on the left side and extending from beneath the posterior border of the sterno-cleido-mastoid muscle to the anterior border of the trapezius and also passing behind the clavicle. The superficial veins over the surrounding area were somewhat engorged; there had never been any pain associated with it. The tumour was felt to be subcutaneous, lobulated, and firm; the skin was freely moveable over it. Removal of the tumour was somewhat difficult owing to adhesions and to extension of the growth deeply into the base of the posterior triangle of the neck on the left side where it had a firm fibrous pedicle which was cut through and ligatured. Primary union followed. The growth, which was of about the size of an ordinary potato, had the structure of a lobulated gland with a capsule and intersections of fibrous tissue. On section, for which I am indebted to Dr. J. Phillips and Dr. F. W. Earich, it was found to consist of a mass of leucocytes, containing in their midst numbers of Hassall's concentric corpuscles of various sizes, some invaded by the leucocytes. The growth was divided by fibrous intersections, of which the larger contained fair-sized blood-vessels.

Remarks.—Owing to the lateral position of the growth thymus did not suggest itself and the diagnosis was only completed by the use of the microscope. Here I may mention that there was no extension of the growth beneath the sternum or any signs of anterior mediastinal growth present. No instance of such a position of a thymus growth can I find in literature. As regards causation, the patient when younger had grown rapidly and is unusually tall; possibly this abnormal growth of thymus may have some connexion with this just as the opposite conditions are associated. Dudgeon¹ and Fortescue-Brickdale² having observed "that in various atrophic conditions in children

Rolleston differentiates between (1) simple persistence, (2) hypertrophy, and (3) hyperplasia of the gland. This case corresponds to his description of hyperplasia in which instead of the normal arrangement of the gland found in hypertrophy the whole field is obscured by small round cells resembling the lymphocytes of a normal thymus. The Hassall's corpuscles do not share in the hyperplasia and are only seen in the remains of the normal thymus. There were no signs of malignancy about the growth.

The thymus is itself a paired epithelial tube derived from the third, fourth, and partly from the second branchial clefts; it then undergoes ramification and gives rise to condensation of the connective tissues around, which then became infiltrated with leucocytes as soon as they are found in the body; thus the more permanent part of the thymus is formed. The epithelial elements become changed into the concentric bodies known as Hassall's corpuscles.

The accompanying illustration, reproduced from a drawing by Dr. Phillips, illustrates a portion of the section well.

Great Horton, Bradford.

A SACCULAR DILATATION OF THE SMALL INTESTINE.

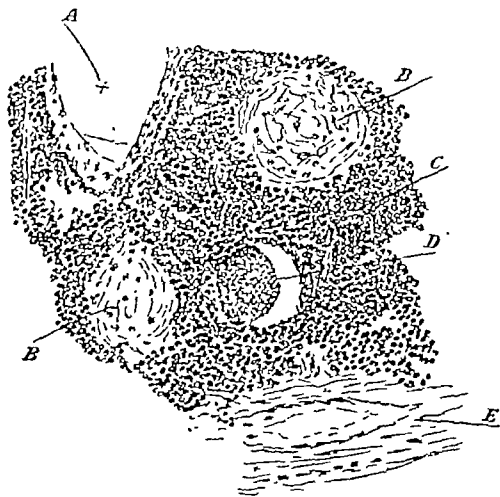
By EDMUND CAUTLEY, M.D. CANTAB.,
F.R.C.P. LOND.,

PHYSICIAN TO THE BELGRAVE HOSPITAL FOR CHILDREN AND THE METROPOLITAN HOSPITAL.

THE following description is that of a remarkable anomaly of development of which I can find no other recorded case. Nor am I able to indicate how the malformation might arise. The patient, from whom it was obtained, was a female infant who died while under my care, at the age of five weeks, in the Metropolitan Hospital on May 14th, 1905. She was admitted on April 27th with a history of vomiting since the third day of life. This had steadily persisted and, after the seventh day, had been associated with diarrhoea. The vomiting followed every meal. Both the vomited matter and the stools were green. She was the first-born child, somewhat small, of healthy parents. Her weight on admission was 4 pounds 13 ounces and she was rather ill nourished. Nothing abnormal was found on examination except in the abdomen. This was unduly prominent on the right side and a tumour of about the size of a pullet's egg could be felt to the right of, and on a level with, the umbilicus. The tumour presented most peculiar characters. It was fairly moveable, elastic, sometimes dull and at others resonant on percussion, and it would disappear entirely after moderate gentle manipulation. The liver dulness in front was completely absent. An inguinal hernia was present on the left side.

On May 3rd the patient's condition was quite unchanged. Vomiting was infrequent. There was no diarrhoea and the stools were small, formed, and green. She was then fed on whey and given small doses of cocaine. She took food well, the vomiting ceased, and the stools became almost normal. On the 7th she weighed 5 pounds 2 ounces. On the 10th she was put on feeds of diluted milk. Two days later vomiting began again, but it stopped after two doses of cocaine and a return to the diet of whey. Apparently she was going on well, but on the 14th she had a convulsion, with carpo-pedal spasm, cyanosis, and unconsciousness. After about ten minutes she revived. On the following day she became very feeble and cold and died from asthenia. There was no return of vomiting or diarrhoea.

Post-mortem examination.—On opening the abdomen a cyst with opaque walls was seen immediately below the liver. The transverse colon was pushed downwards and the liver upwards, so that the edge of the latter was not visible, thus accounting for the absence of liver dulness anteriorly during life. The liver was very much flattened. The gall-bladder was very small and its tip was one and a half inches from the edge of the liver. The cyst was considerably larger than the stomach, which was of normal size. Roughly the cyst measured three inches vertically, two inches transversely, and one inch in the antero-posterior diameter. It was situated in the mesentery, arising from the gut at a distance of 15 inches from the pylorus. It communicated with the gut by two adjacent openings close together, the larger one being as big



Section of tumour. A, Blood-vessel. B, Hassall's corpuscle. C, Small cell infiltration. D, Mass of closely packed leucocytes. E, Fibrous intersection.

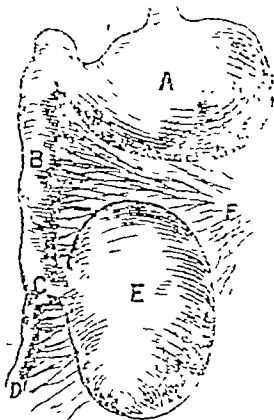
fibrosis of the thymus, with the resulting functional extinction, occurs with great rapidity, so that it has been said that an estimate of the nutrition of an infant may be formed by an examination of the thymus gland."

Prognosis.—In a full and interesting paper in the *Clinical Journal* of Jan. 4th, 1899, on Thymus Tumours Dr. H. D.

¹ Dudgeon: *Journal of Pathology and Bacteriology*, 1904-05, vol. x., p. 175.
² Fortescue-Brickdale: *THE LANCET*, Oct. 7th, 1905, p. 1029.

³ Gulland: *Laboratory Reports of the Royal College of Physicians of Edinburgh*, vol. III., p. 172.

as a threepenny-bit and the smaller one quite minute.¹ The edges of the openings were smooth and irregular. In general appearance the cyst can be best described as similar to a saccular aneurysm of the aorta with a small orifice. The duodenum and a small part of the jejunum above the origin of the cyst were much dilated and hypertrophied, while below the intestine was thin-walled and collapsed. Opposite the cyst the lumen of the canal seemed somewhat narrowed from pressure but there was no true stricture. Both cyst and intestines contained normal bile-stained contents. Microscopically, the wall of the cyst was identical with that of the intestine from which it arose, the muscular tissue being considerably hypertrophied.



Diagrammatic representation of the sac. A, Stomach. B, Hypertrophied and dilated duodenum and jejunum. C, Constriction at level of opening into the sac. D, Thin gut below the constriction. E, Sac. F, Mesentery.

Thus the post-mortem conditions clearly explain the symptoms present during life. The vomiting was due to pressure of the cyst, when full, on the lumen of the canal, causing intestinal obstruction. The alterations in resonance, the moveable character, and the disappearance of the tumour on manipulation were the results of the variable amount of distension of the cyst and the gradual emptying of it by gentle pressure. This also explains the variable character of the vomiting. When the cyst was more or less empty the obstruction produced by pressure of the cyst on the intestine would be absent.

Naturally the diagnosis was extremely difficult. Although life might have been saved by surgical measures I did not feel justified in recommending operation. The history of persistent vomiting, beginning a few days after birth, suggested intestinal stenosis. Congenital hypertrophic stenosis of the pylorus could be excluded by the character of the vomiting and the presence of bile in the vomited matter. Moreover, such a diagnosis would not explain the presence of the tumour. After careful consideration I took the view that the case was one of incomplete stenosis of the gut, due to a congenital defect of development, and that the variable tumour was the result of dilatation of the gut above the stricture, increased at times by peristaltic contractions. Its disappearance I thought was due to intestinal gas and other contents being forced through the narrowed channel by gentle manipulation. The fact that a diet of whey could be absorbed and caused a marked diminution of vomiting, indicated that there was a reasonably patent opening. For that reason I postponed surgical interference in the hope that the child's condition would improve sufficiently for it to undergo operative treatment.

It is conceivable that a true mesenteric cyst might arise in a similar manner, being cut off entirely from communication with the intestinal tract. Gradually increasing distension would lead to thinning of the wall to such an extent that it might be impossible to recognise its structure.

Upper Brook-street, W.

PNEUMOTHORAX DUE TO MUSCULAR EXERTION IN A HEALTHY LAD.

By W. GIFFORD NASH, F.R.C.S. Eng.,
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ON Nov. 8th, 1905, a strong athletic lad, aged 18 years, was playing as a forward in a football match. 40 minutes from the start he obtained the ball and ran with it until he came to the back, over whose head he kicked it. The ball went out of play and he stooped down to pull up his right stocking. Whilst doing this he was seized with severe cramp-like pain in the right side of his chest just below the nipple. He was unable to continue playing. A medical man on the field examined him and finding great dyspnoea thought he had broken a rib and applied a towel to support the chest wall. The lad was carried to a house near by where I saw him two hours after the injury. He was propped up in bed suffering from considerable pain in the chest and great dyspnoea. The respirations were about 60 per minute and the pulse was 72. The pain was located below the right nipple, at which point friction could be heard. Discomfort was also felt in the epigastrium and at the root of the neck. No fracture of the ribs could be detected and it seemed to me that the diagnosis lay between a rupture of the diaphragm and rupture of the intercostal muscles. I strapped and bandaged the chest, which gave great relief. On the next day his respirations were 40, his pulse was 72, and his temperature was 99° 4° F. This was the only occasion on which there was any rise of temperature. A short cough suggestive of pleurisy was present. There was not at any time any expectoration. I came to the conclusion that the diaphragm was uninjured as the breathing was chiefly abdominal and free from pain. It occurred to me that the symptoms might be caused by a rupture of the lung and I kept a sharp look out for signs of pneumothorax.

On Nov. 12th, the fourth day after the onset, all typical signs of pneumothorax were present—viz., bulging and loss of movement of the right side, displacement of the heart's apex to the left of the left nipple, obliteration of the liver dullness which gradually diminished until it entirely disappeared, hyper-resonance on percussion, absence of normal breath sounds, amphoric breathing and the bell sound. On this day the respirations were 24. On the 17th I introduced a fine trocar and cannula without any benefit. On the 19th respirations were 18. On the 29th air was drawn off with an aspirator. On Dec. 5th the heart's apex beat was in the normal position and on the 12th all signs of air in the pleural cavity had gone. At the time of puncture and aspiration no fluid of any kind escaped from the chest.

Remarks.—Simple pneumothorax from muscular effort is so rare that every case is worth recording. Stephen Paget¹ says: "A few cases seem to show that a severe strain may cause slight laceration of the surface of the lung and pneumothorax, even though the lung be healthy." I believe that this case comes under this category.

The ordinary explanation given of pneumothorax is that it is due either to rupture of a superficial tuberculous focus or to rupture of an emphysematous bleb or tearing of a pleuritic adhesion. In the case under consideration there was no suspicion of tubercle. The lad was previously perfectly healthy and the son of healthy parents. There were no evening rise of temperature and no cough except on the day following the injury. There was no expectoration and there was no effusion of anything but air into the pleural cavity. The "rupture of an emphysematous bleb" theory is more probable but there had been no illness likely to cause emphysema and the severity of the symptoms at the beginning of the attack, before pneumothorax was detected, pointed to a more serious injury than the rupture of a small bleb. The tearing away from the surface of the lung of a pleural adhesion might explain the pneumothorax but there was no history of any antecedent pleurisy. On the whole the evidence rather points to a superficial rupture of the lung near its lower anterior margin. A distended lung is more easily lacerated than an empty one and the lung would naturally become engorged by hard running such as is necessary at football. When any part of the lung is suddenly compressed it may burst. In the case under notice

¹ Surgery of the Chest, p. 65.

THE NEWPORT AND MONMOUTHSHIRE HOSPITAL.
—During 1905 the "Newport Workmen's Fund" raised £1661 for the funds of the Newport and Monmouthshire Hospital.

¹ In the diagram too distinct a neck is ascribed to the sac.

the engorged margin of the lung was probably squeezed between the diaphragm lying over the liver and the anterior chest-wall.

It is difficult to conceive why hæmorrhage into the pleura did not occur to any detectable extent, especially when one reads of Dr. G. Newton Pitt's fatal case² where many pints of blood were found in the pleural cavity of a lad and the only source of the bleeding was a ruptured emphysematous bleb and a small torn adhesion. Dr. F. Parkes Weber in the Transactions of the Clinical Society of London, 1900, p. 171, discusses the cause of pneumothorax in apparently healthy persons.

As to the treatment adopted in this case—viz., tapping and aspirating the chest to draw off the air—I doubt whether it was a wise procedure, as the air generally becomes absorbed in one or two months and the risk of sudden death from puncture of the chest is not a negligible quantity.

Bedford.

CASES OF STOMATITIS AND TONSILLITIS IN WHICH VINCENT'S SPIROCHÆTA AND BACILLUS WERE PRESENT.

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AND

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THE following are the notes of eleven cases of stomatitis and tonsillitis in which the spirochæta and fusiform bacillus first described by Professor Vincent were present. The cases presented themselves for treatment at St. Thomas's Hospital, the first of our series appearing on Nov. 15th, 1905, and were drawn from the surrounding districts of Lambeth and Wandsworth. The majority of our cases occurred in children under seven years of age, three cases only occurring in adults. In most of them the onset of the disease was insidious, the parents merely noticing that the child did not take his food or complained of a sore throat; in some the onset was characterised by headache, furred tongue, general feeling of malaise, and a sore throat. In all cases there was marked offensiveness of the breath.

In those cases where the tonsil was the seat of the disease the appearances were as follows: there were some swelling and inflammation of the tonsil which was covered with a greyish white membrane showing a tendency to invade the uvula and anterior and posterior faucial pillars. This false membrane did not resemble the thick white membrane that occurs in diphtheria, but presented more the appearance of a superficial necrosis with exudation. In one case, however, the tonsil was covered with several greyish-white patches very closely resembling that sometimes seen in diphtheria; bacteriological examination of a swab made from this case showed no diphtheria bacilli but the presence of Vincent's spirochæta and bacillus. Removal of this membrane caused bleeding and it was then apparent that slight or considerable excavation of the underlying tissues had taken place according as the case was a mild diphtheroid one or a severe ulcero-membranous one. There was moderate enlargement of the cervical glands with elevation of temperature varying from 100° to 103° F., usually falling to normal about the fourth or fifth day. The tonsil was the seat of the disease in four of our cases and in three of these there were carious teeth in the mouth. The cases healed rapidly with antiseptic mouth washes and no suppuration occurred in the cervical glands.

In the remaining seven cases where the buccal mucous membrane of the cheek or gums was affected the appearance presented was similar to that of an ulcerative stomatitis. In all these cases carious teeth were present in the mouth and it was apparently round these that the disease had arisen. The gums were spongy and bled easily; the breath was very offensive. At the edge of the gum round the carious teeth there was a narrow margin of necrotic tissue. The teeth in many cases were loose and in five of the seven cases there was a greyish-white necrotic patch on the mucous

membrane of the cheek opposite the carious teeth. The cheek itself was swollen and oedematous. Both from the edge of the gum round the decayed teeth and from the necrotic area on the mucous membrane of the cheek the spirochæta and fusiform bacillus of Vincent were isolated. The cervical glands were moderately enlarged. The removal of the false membrane from the buccal surface of the cheek caused bleeding and left an excavated surface similar to that seen on the tonsil. In the severest case of our series the disease had commenced at the margin of the gum behind the two upper incisor teeth, which were healthy, though the left lower molar was much decayed. The teeth soon became loose and a deep slough formed, which on removal exposed a small area of bare bone of the alveolar process. The cavity is at present healing by granulation and though the disease started five weeks ago the process is not yet complete.

In every case the diagnosis was confirmed by the presence in the swab taken from the mouth or tonsil of one or both of the organisms described by Professor Vincent. Although the tonsillar lesions might easily be confounded with diphtheria it is significant as indicating the characteristic clinical appearance of the disease that in every case of this series, the first only excepted, the clinical diagnosis was confirmed by the bacteriological report, and there were, on the other hand, only some four or five cases examined with a negative result in which a doubtful diagnosis of Vincent's angina had been made.

In ten out of the 11 cases both the spirilla and the fusiform bacilli were present, in one case the fusiform bacilli only; in this case several long, slender, curved bacilli were seen in places, forming one well-defined loop but no definite spirilla. In two cases large numbers of other organisms were present, the fusiform bacilli and spirilla being so much in the minority that a prolonged examination was necessary to demonstrate them. In both these cases the swab had been incubated for from 12 to 24 hours before being examined, and we consider this to be a point of great importance in the diagnosis of these cases, for unless an early examination of the swab be made the spirilla and bacilli tend to die out, while the other organisms present grow prodigiously. In the remaining cases the swab presented an almost pure culture of the organisms, enormous numbers both of the spirilla and the bacilli being present under every field of the microscope.

It was found advisable in taking the swab to remove a portion of the membrane and to rub the swab well into the exposed ulcerated and bleeding surface; then at once to make films upon cover-slips in the usual way. The simplest method of staining is with the ordinary solution of Löffler's methylene blue for from 10 to 15 minutes or for about three times as long as that usually employed for demonstrating the diphtheria bacillus, since the spirilla take up the stain less readily than the other organisms and so might readily be missed unless a special search were being made for them. A slightly more elaborate but certainly more satisfactory method of differentiating the fusiform bacilli is by a modification of Leishman's stain, as suggested by Mr. L. S. Dudgeon and employed by him in staining the spirochæta pallida; by this method the fusiform bacilli are stained blue and the granules purple, in distinction to a coarser, more uniformly staining bacillus often present in oral swabs; the spirilla also are well stained by this method. Both spirilla and fusiform bacilli lose their stain by Gram's method.

The fusiform bacilli are slender, beaded, usually curved bacilli, tapered at both ends and occasionally seen in short chains of two or three. The spirilla vary considerably in length, thickness, and the number of their spirals, the usual number being from five to eight; the organism which they most resemble is the spirochæta pallida, from which they are readily distinguished by their larger size and the greater coarseness and irregularity of their spirals; the average number of spirals is also less in the organisms of Vincent. Occasionally, as in the case of the spirochæta pallida, the spirillum is seen to terminate in a small, circular, head-like extremity with a clear centre, but these extremities are unusual, vary greatly in size, and do not appear to be anything more than the end of the organism curved back upon itself. The spirillum bears no resemblance to the small curved vibrio present about decayed teeth and which has been described by Miller and by Finkler and Prior. The relationship between the fusiform bacilli and the spirilla is not clear and since we are unable to cultivate the organisms we are ignorant of their life-history; in this connexion the

² Transactions of the Clinical Society of London, 1900, p. 95.

interesting suggestion was made by Dr. F. G. Bushnell in a letter to THE LANCET¹ that bodies similar to the Leishman-Donovan bodies of kala-azar might form a stage in the life-history of this organism, as also of the spirochæta pallida.

We have made several attempts to cultivate these organisms but without success, though Professor Vincent in his paper in THE LANCET² stated that the fusiform bacilli were readily cultivated in the ordinary media; the media we have employed have been agar, blood serum, bouillon, milk, and peptone water, and attempts have been made, both aerobically and anaerobically, at temperatures of 37°C. and 42°C., resulting only in a profuse growth of the common cocci and bacilli of the mouth. Owing to the ease with which these organisms may be misread if swabs and cultures are taken, incubated, and examined in the manner customary with suspected cases of diphtheria, coupled also with the fact that many cases of ulcerative and even membranous stomatitis are not examined at all with a view to their bacteriology, we would suggest that cases of Vincent's angina are by no means so uncommon in this country as the rarity of cases hitherto reported might lead one to expect. The cases described by Dr. H. W. Bruce in THE LANCET³ closely resemble those of this series in which the disease was confined to the tonsil. In addition, we have included seven cases of stomatitis in which the lesions exactly resembled those of the tonsillar cases.

Considering the frequent association of carious teeth with this disease it would be of interest to know in what proportion of cases of carious teeth, unaccompanied by membranous ulceration, the organisms of Vincent can be demonstrated; in a few cases examined by us only the ordinary bacteria of the mouth or the small curved vibrio of Miller have been seen. Since we have found that the organisms rapidly disappear from the mouth and the lesions readily improve under treatment, at any rate, in these comparatively mild cases, and since such cases are possibly infectious and if left untreated tend to progress, we have thought it worth while to place on record an account of the few cases observed at St. Thomas's Hospital during the past three months.

NOTES ON A CASE OF ADDISON'S DISEASE, RAPIDLY FATAL, WITH SYMPTOMS OF ACUTE TOXÆMIA.

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THE patient, a man, aged 38 years, was admitted to the Radcliffe Infirmary, Oxford, on Sept. 29th, 1905, under the care of Dr. W. Collier. He was sent to the hospital with a note from a medical man describing the case as one of rheumatic fever of one day's duration. The temperature was 101.2° F., rising in the first six hours to 103.8°, and the pulse was 120. The skin was not sweating. In colour it was rather dark all over the body. The face and hands were like those of a man who had worked generally in the open air and in the sun. The areolæ of the nipples were deeply and symmetrically pigmented. The scrotum and penis were unusually dark, as also were the axillæ but to less degree. There were no other areas of pigmentation on the body, or on the buccal mucous membrane, or on the tongue or conjunctivæ. There was great pain in the ankles, the knees, the elbows, and the wrists and shoulders on movement. Severe pain was produced by pressure on the plantar fascia in both feet. The joints were not reddened and no excess of fluid was detected in any of them. The heart was not enlarged but the sounds were feeble. The pulse was markedly feeble on both sides. The abdomen appeared to be normal. There was no pain. The liver, the kidneys, and the spleen were not felt. The patient was a little deaf. The urine had a specific gravity of 1017 and contained a cloud of albumin but no sugar. Casts were not looked for. The patient was quite cheerful and did not seem depressed or low spirited. He gave his own history. He said that he had been at work on the preceding day and had had to stop on account of severe pains which came on in the

knees, and within a short time invaded the ankles, the wrists, the elbows and the shoulders. He had never had rheumatism or any attacks similar to the present one. He had always been a healthy man and had taken about two or three pints of beer a day. No history pointing to tuberculosis in the family was obtained. The patient was treated with 60 grains of salicylate of sodium in the first six hours (in 20-grain doses) and subsequently with 20 grains every six hours. On the evening of Sept. 30th the temperature was 98.4° and the pulse was 106. On Oct. 1st and 2nd the temperature remained at 95°, the pulse being 96, and the patient was losing all pain from the limbs. He was taking only milk and broth. The milk he objected to—it always disagreed with him. He was sick once on each of these days—each time after taking milk. There was nothing characteristic about the vomit. On the 3rd the patient seemed a little strange in his manner and was inclined to be restless, especially at night. He was, however, quite rational and answered questions correctly. On the 4th the temperature was 97.4° in the morning. The salicylate of sodium was stopped. The amounts of urine for the first three days (Sept. 30th and Oct. 1st and 2nd) were 25, 30, and 23 ounces respectively. The bowels were opened with cascara on Oct. 1st and 2nd. The stools were normal. The patient appeared to be more ill. On the 5th the urine had altered to a brownish-red, smoky colour, and gave the blood reaction with guaiacum and ozonic ether. It contained a thick brown deposit. Under the microscope numerous red cells, a few granular casts, and much debris were seen. A number of crystals of leucine were also present. On the 6th and 7th there was profuse diarrhoea and at the same time great frequency of micturition, about from two to three ounces of urine being passed every few hours. The urine was smoky and contained a thick brown deposit of debris but no leucine. On the 6th two of the stools contained practically only bright red blood and mucus, intimately mixed. The other stools contained only a little fecal matter and darker blood. The last two or three stools on the 7th contained no blood. The patient's general condition had got much worse. He was rapidly sinking into a profound typhoid state. On the 7th the temperature rose to 100.2° and the pulse to 116. The patient complained of slight pain in the abdomen on the 6th. It was worse on the 7th. He referred it to the centre of the abdomen. Pressure just above the umbilicus caused pain. The liver dulness was one inch in extent in the nipple line but it was normal in extent in the mid-axillary line. The ears were examined and both were found to be normal. On the 8th the patient became much more lethargic and difficult to rouse. In the evening he was semi-comatose, but pressure in the abdomen between the umbilicus and the right costal margin caused a good deal of pain. On the 9th the temperature rose to 101° in the morning and to 104° in the evening, when death took place.

The post-mortem examination showed typical fibro-caseous tuberculosis of both suprarenals. No normal suprarenal tissue was seen. The right kidney was large and showed many nodular prominences; it measured five inches by two inches. On section the whole organ was converted into a series of cysts, filled with a putty-like material. The right ureter was blocked and was filled with cheesy matter and the walls were caseous. The left kidney showed marked compensatory hypertrophy and measured six inches by three inches. No tuberculous masses were present. There were two small caseous foci in the right globus major of the testis; the vas was healthy to the naked eye. The bladder and vesiculæ seminales showed no change. No other tuberculous foci were found either in the glands of the thorax or the abdomen, or in the lungs. The right internal ear was examined and was found to be healthy.

Two days before the patient died the following history was obtained from the wife. The patient was a healthy, hard-working man. On Sept. 1st he was taken ill (away from home) and had to go to bed. The chief symptoms were shivering and a change in the colour of the skin. One person, at least, said that the patient had the "yellow jaundice." The wife did not know if the whole body altered in colour. There was no sickness and the patient had a good appetite. The mind was clear. On the 6th he was able to go home but for the next week he had to keep in bed or sit over the fire as he suffered continuously with the "cold shivers." There was a discharge of "matter and blood" from the right ear. No history pointing to definite rigors was obtained. There was no information as to the

¹ THE LANCET, Dec. 9th, 1905, p. 1722.
² THE LANCET, May 13th, 1904, p. 1282.
³ THE LANCET, July 15th, 1901, p. 125.

urine or the faeces. On the 16th the patient improved sufficiently to leave home to visit some friends, but the discharge from the ear continued. On the 25th he was well enough to start work. On the 28th the pain in the limbs began and he was admitted to the infirmary on the 29th—29 days after he was first taken ill. Death took place on Oct. 9th—39 days from the onset of illness.

There are several points of interest in connexion with this case. When the man was admitted the clinical picture was that of acute rheumatism, with the exception of the sweating. The rapid subsidence of the temperature and the disappearance of all pain in the course of 48 hours on large doses of salicylate of sodium only supported this view. It was not until the mental condition arose and the blood appeared both in the urine and in the faeces that a diagnosis of some general toxic condition was made. Although the pigmentation was marked on the external genitals and in the nipples there was none found elsewhere either in the mouth or on points of pressure. The diminution of the liver dulness and the pain in the abdomen, especially marked towards the end in the liver region, accompanied by leucine in the urine, suggested acute yellow atrophy of the liver. The presence of the high fever on admission and after Oct. 7th was also unlike Addison's disease. In addition the man had been a healthy hard-working man up to four weeks before admission. The difficulty of making a diagnosis was much increased by the history of discharge from the ear which suggested some secondary septicæmia. The case is instructive from two more points of view—history taking and routine examination. The great importance of taking accurate and lengthy histories in all cases where it is possible is not sufficiently taught to students. Too frequently the method adopted is to obtain a short history and to rush at once to the physical examination of the patient. That in a great number of cases the diagnosis is completely made from the history alone is a fact which is not sufficiently emphasised in teaching. The patient's own history should also be verified as far as possible by a few questions put to a friend or relative. The patient may himself think some little point or symptom too trivial to mention and may, in fact, as in the present case, neglect altogether a short illness of a few days. The picture of acute rheumatism, with the patient's statement that he was only taken ill the day before; I took to be sufficient and it was not until the further symptoms arose that I sought for more history from the wife. Routine examination is not, of course, possible in every case. But although one hears a very great deal about the value of thorough routine examination by the bedside it is not often one hears very great stress laid on the value of including the testes in that examination. In three very common classes of cases—namely, malignant disease, syphilis, and tuberculosis—the examination of the scrotum and its contents may be of the utmost importance and may make the diagnosis. In this case the presence of the two nodules in the globus major would certainly have helped.

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A METHOD OF REMOVING CARCINOMA OF THE ASCENDING COLON.

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AS a rule cancer of the colon has but a mild malignancy. It will be found in the natural history of the tumour that half the patients die before the growth has transgressed the limits of the bowel. Occasionally rapid growth and dissemination are seen. I know of one such case, but most cases are of such small virulence that if our technique is good we have an excellent chance of ridding the patient of his disease. The lymphatic glands apposite to the growth, by no means always carcinomatosely affected, are of great resistance and stay for a long period the progress of the cancerous elements. Metastatic developments are unusual and occur only after a considerable lapse of time. They appear to have the same low malignancy as the parent growth and may give no sign of their presence for years.

These characteristics of the disease are favourable to the patient if we can give him operative success. For the surgeon

there is a good deal to add him technically—e.g., the mass can generally be well delivered through the wound so that the resection and anastomosis can be made extra peritoneally, the colonic area is distinctly less susceptible to germ infection than other parts of the serous surface, the blood-supply is excellent, and its valency can be easily insured. The glands are found and removed with facility and their ducts are not involved on either side till late in the disease. These assets, however, are operatively more than balanced by conditions which cause much anxiety to the surgeon.

The gut has a redundant mucous membrane, strong muscles which produce anti-peristalsis as well as its opposite, and there exists a peritoneal covering the extent of which the surgeon cannot gauge until he actually sees it. The part which he has to remove is bounded above by a natural angulation, which has probably increased a good deal with the patient's advancing years, and below by a cul-de-sac, the normal large size of which is still further enhanced by the presence of the obstruction beyond and the fermenting nature of its contents. This cæcum thus becomes almost a closed segment and when we consider the tumour ahead and the splinter of the ileum on the liether side we do not wonder that absence of drainage allows of almost indefinite bacterial growth. The natural flora is intensified in malfecient qualities and inhibited as to its physiological use. The cæcal and appendical mucus is much altered in quantity and character. This place, the antithesis of all for which the surgeon wishes, cannot be properly emptied or even slightly antiseptified except by a previous opening, which but partially fulfils its objects, while it certainly infects the surrounding operative area. The eminently perilous and fluid cæcal contents will have to pass over the recently made junction, the mechanical resistance of which may be high but the vital resistance of which must be lowered. The inner aspect of the stricture is probably ulcerated, which by allowing absorption further embarrasses the lymphatic glands; thus everything may be said to be in an explosive state.

These considerations influenced me recently in a case of carcinoma of the ascending colon about three inches beyond the cæcum to operate by what I believe to be an improved method. Shortly after this first case I had the opportunity of repeating the procedure and being equally pleased with the results, both at the time of operation and afterwards, I thought it worth while to detail the *modus operandi*, which, I take it, neutralises many of the above-stated disadvantages. No intestinal preparation except careful dieting is attempted. No purgation is used or antiseptic given. Enemata are administered but a purgative would only futilely irritate the bowel above the growth and possibly precipitate a perforation. The abdomen is entered through the sheath behind the rectus internal to the linea semilunaris. The tumour is located and its removal being decided on the transverse colon is pulled down, two forceps are applied to it close together, a heavy one on the proximal side, and the gut is divided with large scissors in one cut. Swabs are used to avoid soiling the cavity, and the heavy forceps attached to the gut is allowed to hang out of the wound, a proceeding which puts the mesocolon on the stretch. The branches of the middle colic artery are easily found, for they stand out by reason of the tension and the fact that they are the thickened arteries of an elderly person. Two or three branches have to be secured. The right colic artery now invites attention, and can readily be tied far back by a single ligature; this devascularises a large portion of mesocolon, which can be speedily severed by large scissors. The amount of gut at present hanging out of the wound is considerable, as the cæcum "is in the air" without support. The resulting traction shows the ileo-colic trunk in strong salience. Forceps are then placed on the ileum, about four inches from the junction of the great and small intestine, and the gut is divided; the distal end now depends from the wound, so that the whole portion to be resected is hanging by the ileo-colic artery and some peritoneum. This blood-vessel is ligatured far back, the isthmus of tissue left is divided close to it, and the resected gut, two forceps, and the ileo-colic glands fall out of the wound all together. There is no need to investigate the important ileo-colic lymphatic area, for it has gone, but the mesocolic region should be examined for glands which may have escaped the section. Thus four, or at most five, arteries have to be tied; the transverse colon is divided at right angles to its lumen, but the ileum, if it approaches the calibre of the colon closely

enough to allow of apposition, is severed in a direction obliquely downwards to the mesenteric attachment, which, of course, increases the size of the open end. If the dispropor- tion be too great the ileum is also separated at right angles, the patent lumen to be afterwards applied by means of temporary sutures to an incision proportionate in length in the fundus of the colon about two inches from the gaping end, through which the stay ligatures are pulled, reverting Mannell's method, and the new ileo-colic junction is quickly made by through-and-through sutures, to be reinforced after the ileum is pulled back by a continuous Lambert suture. The end of the colon being closed the operation, but for ordinary detail, is completed.

The disadvantages of the procedure are 1 That a large amount of gut is removed. In the first case the specimen proved to be 13 inches long and in the second 16 inches. Much of this gut is healthy, but the portion with the greater physiological importance—viz., the cæcum and possibly the appendix—is diseased from chronic irritation and inflammation of the mucous membrane, the glandular functions of which have been grossly altered. 2 The acid chyme now passes directly from the ileum into the transverse colon, where it lacks the mollifying influence of cæcal and appendiceal mucus. This undue haste in the intestinal current may with its acidity still unneutralised in reaction conduce to colon irritability and diarrhoea, but it must be remembered that this new state of things is tempered by the facts that an attempt at a sphincter probably arises in time at the re- junction, that the current is against gravity as in the natural ascending colon, and that the colon is much shortened, there being therefore much less colon to be irritated. In this connection it was interesting to note that in each case the bowels acted freely with large motions a few hours after the operation, which can hardly be accounted a disadvantage.

The benefits are several. 1 That the disease is very freely removed, especially the dangerous ileo-colic glands. 2 The removal is practically in one mass. 3 That the in- tensely dirty and dilated intestine just above the stricture is, with the equally dirty cæcum, removed by incisions which do not approach these perilous pouches. Examination of the specimens showed that no purgation or artificial anus could have cleansed what is a sewer when pathological, though an important physiological absorbing cavity when healthy, as we could only rid the small diverticula of their contents by forceps. 4 The ends of the proctum to be resected immediately after division hang out of the wound by virtue of the weight of the forceps, thus an important source of contamination is safely diverted. 5 The arteries are easily found, are tied far back, and thus are very few in number. There is no danger whatever of devascularising a portion of intestine not resected. 6 When the resected portion has fallen entirely out of the wound the cut end of the colon will be found lying in close proximity to the cut end of the ileum. The natural sagging of the transverse colon in elderly people aids this propinquity. There is no tension whatever on the join. 7 The ends to be coap- ted are both entirely peritoneal, whereas if we use the ascending colon we can never be sure how much non-peritoneal surface will be discovered. 8 The angle of the hepatic flexure, rendered more acute by the dropping of the transverse colon, is abolished and with it a considerable liability to pseudo-ileus. The bowels act soon and though the motion may be acid in reaction it comes directly from a place where the mucous membrane is healthy. 9 The removal of the intestine is a much speedier procedure than might be expected, taking no more time than its description above. It reminds me of the facility with which the gall bladder is separated when the duct and artery are ligated far back and what is to be the specimen is stripped from behind forwards. The resection is not difficult, no cir- cumsppection is needed above, the branches of the middle colic requiring much more care in being picked up than the bigger right colic and ileo-colic arteries. Regard must be had lest the duodenum or stomach be injured, as the traction draws down the stomach a good deal. Division of Toft's ligament allows the flexure to be stripped out easily. The rest of the extirpation is very simple.

Two sutures are necessary to close the peritoneal hiatus, the edges of which fall appositely together. The avoidance of a preparation which includes purgation and an artificial anus commends itself strongly to me on both pathological and surgical grounds. In both my cases where obstruction was still some distance off an improvement was noticed in the patient when the intestinal mass with its load of poison

was eliminated, how much more, then, will relief be given in such a case if actual obstruction exists and this relief can be brought about without a previous opening of the distended obstructed gut and with little risk of soiling the operation area with poison from within.

It is thus from technical reasons and not from Metchnikoffian motives that I advocate this large resection. I shall watch with interest the future intestinal habits of these two patients to note, if I live long enough, whether "the nature of man" is in their case altered by the removal of so much of the large bowel. In a patient who cæcum I removed seven years ago by a less liberal resection, the only symptom at the present time which can possibly be traced to the absence of cæcal and appendiceal mucus is a small but persistent discomfort in the region of the sigmoid flexure, which with the cæcum gone becomes the main resting place of what may still be acid contents.

MALTA FEVER

MALTA FEVER IN INDIA—ISOLATION OF THE MICROCOCCUS MELITENSIS FROM THE MILK OF A DOMESTIC GOAT IN THE PUNJAB

By W. H. C. FORSTER, M.B., C.M. EDIN., D.P.H. CAMBR., CAPTAIN, I.M.S., DEPUTY SANITARY COMMISSIONER, PUNJAB.

THE history of Malta fever in India though short, is not devoid of interest. Wright, by means of the agglutination test, was able to demonstrate the specific reaction with the serum of patients invalided from India as the result of an obscure and long continued fever. These observations were confirmed and extended by Lamb and Pais. On his return to India Lamb by means of the same test, was able to prove that natives of India who had never left the country suffered from Malta fever. Cases were soon reported from various parts of the country and the existence of Malta fever as an endemic disease in India seemed to be established beyond the possibility of doubt. Very shortly, however, doubts were raised and so strongly was the opposite view urged that at the beginning of the present year it was officially held that Malta fever had not been proved to exist as an endemic disease in India. In the circumstances it became a pressing necessity that the micrococcus *Melitensis* should be isolated from suspected cases of Malta fever. This work was taken in hand by Lamb and Pais¹ who speedily disposed of all doubts on the subject by isolating the micrococcus *Melitensis* from the spleens of a number of persons suspected to be suffering from Malta fever. Lamb and Pais had barely concluded their observations when the papers of Dr. Zammit and Major W. H. Horrocks were received in India.²

Lamb and Pais, in the course of their work, had shown that Malta fever was actually epidemic in three cantonments of the Punjab and so I decided to repeat the observations of Dr. Zammit and Major Horrocks on the goats supplying milk to these cantonments. A reference to the laboratory records showed that cases of Malta fever had recently occurred in the 14th Sikhs stationed at Ferozepore and I therefore decided to commence operations there. At Ferozepore I found that the conditions were peculiarly favourable for the observations I proposed to carry out. The goat stock of the cantonment, exclusive of animals the private property of officers and their servants and kept in the compounds of their owners, numbered about 1000 head. This total, however, was made up of a number of small herds, the property of individual goatherds, who had parcelled out the cantonment amongst themselves for the purpose of milk-supply. Each unit was always supplied with milk by the same goatherds and I was thus able at once to locate the herds from which the 14th Sikhs had been supplied with milk throughout the year. These herds conjointly amounted to about 100 head, of which some 80 odd were giving milk at the time of my visit. Every facility was afforded me by the officer commanding the regiment and with the aid of Major T. A. O. Langston, I.M.S., in medical charge of the regiment, I was at once able to test the blood of the goats

¹ Scientific Memoirs. This paper is in the press.
² Proceedings of the Royal Society, Series B, vol. lxxvi, 1905.

urine or the faeces. On the 16th the patient improved sufficiently to leave home to visit some friends, but the discharge from the ear continued. On the 25th he was well enough to start work. On the 28th the pain in the limbs began and he was admitted to the infirmary on the 29th—29 days after he was first taken ill. Death took place on Oct. 9th—39 days from the onset of illness.

There are several points of interest in connexion with this case. When the man was admitted the clinical picture was that of acute rheumatism, with the exception of the sweating. The rapid subsidence of the temperature and the disappearance of all pain in the course of 48 hours on large doses of salicylate of sodium only supported this view. It was not until the mental condition arose and the blood appeared both in the urine and in the faeces that a diagnosis of some general toxic condition was made. Although the pigmentation was marked on the external genitals and in the nipples there was none found elsewhere either in the mouth or on points of pressure. The diminution of the liver dulness and the pain in the abdomen, especially marked towards the end in the liver region, accompanied by leucine in the urine, suggested acute yellow atrophy of the liver. The presence of the high fever on admission and after Oct. 7th was also unlike Addison's disease. In addition the man had been a healthy hard-working man up to four weeks before admission. The difficulty of making a diagnosis was much increased by the history of discharge from the ear which suggested some secondary septicæmia. The case is instructive from two more points of view—history taking and routine examination. The great importance of taking accurate and lengthy histories in all cases where it is possible is not sufficiently taught to students. Too frequently the method adopted is to obtain a short history and to rush at once to the physical examination of the patient. That in a great number of cases the diagnosis is completely made from the history alone is a fact which is not sufficiently emphasised in teaching. The patient's own history should also be verified as far as possible by a few questions put to a friend or relative. The patient may himself think some little point or symptom too trivial to mention and may, in fact, as in the present case, neglect altogether a short illness of a few days. The picture of acute rheumatism, with the patient's statement that he was only taken ill the day before, I took to be sufficient and it was not until the further symptoms arose that I sought for more history from the wife. Routine examination is not, of course, possible in every case. But although one hears a very great deal about the value of thorough routine examination by the bedside it is not often one hears very great stress laid on the value of including the testes in that examination. In three very common classes of cases—namely, malignant disease, syphilis, and tuberculosis—the examination of the scrotum and its contents may be of the utmost importance and may make the diagnosis. In this case the presence of the two nodules in the globus major would certainly have helped.

Radcliffe Infirmary, Oxford.

A METHOD OF REMOVING CARCINOMA OF THE ASCENDING COLON.

By FREDERICK D. BIRD, M.B., M.S. MELB.,
M.R.C.S. ENG.,

LECTURER ON SURGERY AT THE UNIVERSITY OF MELBOURNE.

AS a rule cancer of the colon has but a mild malignancy. It will be found in the natural history of the tumour that half the patients die before the growth has transgressed the limits of the bowel. Occasionally rapid growth and dissemination are seen. I know of one such case, but most cases are of such small virulence that if our technique is good we have an excellent chance of ridding the patient of his disease. The lymphatic glands apposite to the growth, by no means always carcinomatosely affected, are of great resistance and stay for a long period the progress of the cancerous elements. Metastatic developments are unusual and occur only after a considerable lapse of time. They appear to have the same low malignancy as the parent growth and may give no sign of their presence for years.

These characteristics of the disease are favourable to the patient if we can give him operative success. For the surgeon

there is a good deal to aid him technically—e.g., the mass can generally be well delivered through the wound so that the resection and anastomosis can be made extra peritoneally, the colonic area is distinctly less susceptible to germ infection than other parts of the serous surface, the blood-supply is excellent, and its valency can be easily insured. The glands are found and removed with facility and their ducts are not involved on either side till late in the disease. These assets, however, are operatively more than balanced by conditions which cause much anxiety to the surgeon.

The gut has a redundant mucous membrane, strong muscles which produce anti-peristalsis as well as its opposite, and there exists a peritoneal covering the extent of which the surgeon cannot gauge until he actually sees it. The part which he has to remove is bounded above by a natural angulation, which has probably increased a good deal with the patient's advancing years, and below by a cul-de-sac, the normal large size of which is still further enhanced by the presence of the obstruction beyond and the fermenting nature of its contents. This cæcum thus becomes almost a closed segment and when we consider the tumour ahead and the sphincter of the ileum on the hither side we do not wonder that absence of drainage allows of almost indefinite bacterial growth. The natural flora is intensified in malarial qualities and inhibited as to its physiological uses. The cæcal and appendical mucus is much altered in quantity and character. This place, the antithesis of all for which the surgeon wishes, cannot be properly emptied or even slightly antiseptified except by a previous opening, which but partially fulfils its objects, while it certainly infects the surrounding operative area. The eminently perilous and fluid cæcal contents will have to pass over the recently made junction, the mechanical resistance of which may be high but the vital resistance of which must be lowered. The inner aspect of the stricture is probably ulcerated, which by allowing absorption further embarrasses the lymphatic glands; thus everything may be said to be in an explosive state.

These considerations influenced me recently in a case of carcinoma of the ascending colon about three inches beyond the cæcum to operate by what I believe to be an improved method. Shortly after this first case I had the opportunity of repeating the procedure and being equally pleased with the results, both at the time of operation and afterwards, I thought it worth while to detail the *modus operandi*, which, I take it, neutralises many of the above-stated disadvantages. No intestinal preparation except careful dieting is attempted. No purgation is used or antiseptic given. Enemata are administered but a purgative would only futilely irritate the bowel above the growth and possibly precipitate a perforation. The abdomen is entered through the sheath behind the rectus internal to the linea semilunaris. The tumour is located and its removal being decided on the transverse colon is pulled down, two forceps are applied to it close together, a heavy one on the proximal side, and the gut is divided with large scissors in one cut. Swabs are used to avoid soiling the cavity, and the heavy forceps attached to the gut is allowed to hang out of the wound, a proceeding which puts the mesocolon on the stretch. The branches of the middle colic artery are easily found, for they stand out by reason of the tension and the fact that they are the thickened arteries of an elderly person. Two or three branches have to be secured. The right colic artery now invites attention, and can readily be tied far back by a single ligature; this devascularises a large portion of mesocolon, which can be speedily severed by large scissors. The amount of gut at present hanging out of the wound is considerable, as the cæcum "is in the air" without support. The resulting traction shows the ileo-colic trunk in strong salience. Forceps are then placed on the ileum, about four inches from the junction of the great and small intestine, and the gut is divided; the distal end now depends from the wound, so that the whole portion to be resected is hanging by the ileo-colic artery and some peritoneum. This blood-vessel is ligatured far back, the isthmus of tissue left is divided close to it, and the resected gut, two forceps, and the ileo-colic glands fall out of the wound all together. There is no need to investigate the important ileo-colic lymphatic area, for it has gone, but the mesocolic region should be examined for glands which may have escaped the section. Thus four, or at most five, arteries have to be tied; the transverse colon is divided at right angles to its lumen, but the ileum, if it approaches, the calibre of the colon closely

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF ILIAC ABSCESS; DEATH FROM ACUTE SPINAL MENINGITIS.

(Under the care of Mr. G. R. TURNER.)

FOR the notes of the case we are indebted to Mr. W. Fedde Fedden, surgical registrar to the hospital.

A man, aged 28 years, was admitted to St. George's Hospital on Jan. 12th suffering from a painful swelling in the right groin and a temperature of 101° F. The patient had had pain in the right groin for three weeks. The right hip-joint had been kept at rest in the flexed position during the last week and two days before admission a swelling appeared in the groin. The patient had never been strong and had had trouble in the region of the right iliac bone for ten years. There were no cough and no history of pulmonary tuberculosis either in himself or in any of his family. A strongly marked insane tendency was present, the patient's father having committed suicide and the patient himself having been in Hanwell Asylum two years previously after an attack of influenza. When admitted he was in obvious pain in the region of the right hip; the joint was kept still and flexed at a right angle; a limited amount of movement was possible and it caused pain, but the joint itself appeared to be free from disease. Over the sacrum was a scar of an abscess which was opened six years ago and which healed up quickly. No pain was felt on jarring the sacro-iliac joint and there was no evidence of disease in the dorsal or lumbar vertebrae. At the middle of the iliac crest was the scar of an operation done ten years ago, and here a sinus existed with blue undermined edges, and this had discharged on and off ever since. The crest of the bone in this region appeared to be thickened. In the groin a fluctuating swelling both above and below Poupart's ligament was to be made out which only appeared 48 hours before admission. During the next two days the patient's temperature varied between 101° and 103° and his mental condition was unsatisfactory. He slept but little and was delirious at nights.

The abscess was opened just internal to the anterior superior spine and about a pint of pus was evacuated. The abscess cavity extended underneath the femoral vessels and upwards into the iliac fossa; the venter illi was completely bare and the finger could be passed over the brim of the pelvis. The iliacus muscle had apparently disappeared and the peritoneum above was much thickened. The cavity was thoroughly irrigated with saline solution and the wound was closed with sutures. After the operation the patient had no sleep and was delirious and the urine had to be drawn off by catheter. Three days later he suddenly took a change for the worse with a rapid and irregular pulse. The temperature dropped to 97° and subsequently rose to 104°. Saline intravenous transfusion and strychnine injections were given, but a few hours later he again collapsed and then recovered, the collapse remaining and increasing until he died, about 20 hours after the first indication of any serious complication. The pus removed at the time of operation was reported to contain numerous staphylococci. No tubercle bacilli were found.

Necropsy.—The abscess was found to originate at the inner surface of the ilium, which was carious. A huge retro-peritoneal abscess extended upwards beneath the psoas and downwards through the upper part of the obturator foramen and into the buttock, where it ramified in all directions. The pus infiltrated the muscles on the right side of the spine but there was no caries of the vertebrae themselves. Pus exuded along the spinal nerves on both sides. The brain was congested, but there was no meningitis. The whole spinal cord was thickly covered with green pus, the path of

infection being most probably along the sacral nerve roots. No special features worthy of note were discovered either in the thoracic or abdominal viscera.

Remarks by Mr. FEDDEN.—This case is worthy of being recorded on account of its unusual termination. The man was suffering from a marked sypremia which lighted up the old tendency to insanity. The infection of the spinal meninges *via* the sacral nerve foramina has not, as far as I am aware, been recorded in a similar case previously. During life he did not show any special signs whereby spinal meningitis might have been diagnosed and it was only post mortem that the condition was discovered. The infection of the meninges apparently did not immediately follow the operation, but appeared about three days later, and the condition of purulent infiltration about the spinal cord was extremely marked. I am indebted to Mr. G. R. Turner for permission to publish this case.

AYR COUNTY HOSPITAL.

THREE CASES OF SARCOMA OF THE FEMUR.

(Under the care of Dr. J. W. NAISMITH and Dr. A. YOUNG.)

FOR the notes of the cases we are indebted to Dr. John Allan, late resident medical officer.

CASE 1.—This case is of interest, because there was spontaneous fracture of the femur. The patient was a man, aged 43 years, and was admitted to Ayr County Hospital on Dec. 19th, 1904. The history was as follows. Towards the end of November, 1904, the patient was seized with severe pain in the right thigh. The pain was sometimes felt in the front of the thigh, sometimes at the back, and was most excruciating and kept him awake at night, often necessitating the administration of an opiate in order that he might get sleep. It was shooting in character and pain was often felt at the right ankle. His medical man outside treated him for sciatica. About a week before admission when turning in bed one day he was seized with a sharp cutting pain high up in the thigh. He said it felt as if nails were being driven into the thigh at that point from above and from below. About the middle of September and towards the end of October he had had attacks of severe shooting pains in the thigh, but both these passed off in a few days and he was able to get about.

On admission to hospital the patient screamed out with pain when being lifted into bed. He lay in bed quite fixed and kept his thigh absolutely rigid. The slightest attempt to move the limb caused him the most excruciating pain and it was impossible to test the effect of pressure along the course of the sciatic nerve. The pain seemed rather to be on the front of the thigh but was felt posteriorly as well. He was put on 20 grains of salicylate of sodium every six hours and turpentine stupes were applied locally. There was no improvement under this treatment and as his thigh and leg had a tendency to be everted it was decided to examine him under an anæsthetic. It was then found that there was a fracture of the femur just below the trochanters. He was examined with the x rays two days later and the fracture was easily seen. The femur was also seen to be expanded at its upper end. Sarcoma was diagnosed but operative interference was considered hopeless owing to the tumour being so high up. The limb was put up in extension and a Liston's long splint. This gave relief for a time. The swelling gradually increased and the splint had to be adjusted frequently. The extension was taken off early in January, 1905, but the splint was kept on, as it steadied the part and the patient felt more comfortable when it was on. When matters were explained to the patient he accepted the inevitable and he bore himself manfully and heroically to the end. The swelling, however, became so great that in the beginning of February, 1905, the splint was taken off. The subsequent history can be dismissed in a few words. The swelling gradually increased and the thigh became of enormous dimensions. Dr. Allan took measurements a few weeks before his death but unfortunately he lost the paper on which he noted the figures. So far as he remembered there was a difference of eight inches in the circumferences of the two thighs and a difference of six inches in measurements taken from the anterior superior iliac spines to the gluteal folds. The patient had to have opium constantly to deaden the pain and before death he was having from 90 to 120 minims of morphine daily. He died on March 23rd, 1905. No post-mortem examination was allowed.

supplying milk to the regiment. Long experience in handling goats has convinced me that the easiest, most expeditious, and least painful method of obtaining blood from goats in large or small quantities is to draw it off from the jugular vein by means of a hypodermic syringe. Briefly the procedure adopted was as follows.

A series of small glass tubes of one cubic centimetre capacity and provided with a cotton-wool plug was placed handy in suitable small racks. A goat was placed on the table, the hair over the region of the jugular vein moistened with carbolic lotion, about an inch of the course of the jugular vein was freed from hair with a sweep of a razor, and about 0.5 cubic centimetre of blood was drawn off with a hypodermic syringe. The blood was transferred from the syringe to one of the small glass tubes and the latter was numbered with a grease pencil. A linen tab bearing the same number was then tied round the neck of the goat and the animal was released. The syringe was then washed out with normal salt and the next goat was taken in hand. In this way samples of blood were taken from 38 goats and the animals were provided with identifying numbers in less than an hour. When the last sample had been taken the first samples were ready for testing.

The test culture employed was a dead emulsion in normal salt of a strain of *micrococcus Melitensis* that had been isolated some months previously from the spleen of a patient suffering from Malta fever in Ferozepore. This strain had been carefully tested against normal goats' serum by Captain W. F. Harvey, I.M.S., in connexion with some other work, and it had been found that normal goats' serum failed to agglutinate it when employed in a higher dilution than 1 in 5. In applying the agglutination test Wright's macroscopic method was used. The serum of each goat was tested against the dead emulsion in a dilution of 1 in 20 with the following results.

Number of goats examined.	Number of goats that reacted.	Percentage of reactions.	Distinctive numbers of goats that reacted.
38	4	10.5	10, 12, 17, 27

In Malta Kennedy³ found that the serum of 26 per cent. of the goats examined gave a positive reaction in a dilution of 1 in 20, but the number of goats examined by me is too small to justify any comparison. Of the four goats which gave a positive reaction the serum of Nos. 10, 17, and 27 when further diluted gave a positive reaction in a dilution of 1 in 100 but failed to give any reaction in a dilution of 1 in 1000. After inspection of these goats Nos. 10 and 27 were purchased and removed to the Pasteur Institute, Kasauli, for further investigation.

Bacteriological examination of the milk of Goat 27.—I selected this goat to commence with as it was obviously ill. The animal was thin and listless and had a rough, staring coat. On Oct. 29th milk was withdrawn and four cubic centimetres were centrifugalised. The deposit was then spread over six litmus-glucose-nutrose-agar plates. After 24 hours' incubation at 37° C. three plates showed a few red colonies indicating the growth of extraneous organisms. After three days' incubation all plates showed a dense crop of colonies characteristic of the *micrococcus Melitensis*. Films were prepared from these colonies and stained with watery fuchsin and by Gram's method. These films showed that the organism isolated had the characteristic appearance and staining reactions of the *micrococcus Melitensis*. Some of the colonies were then planted out on agar slopes and the resulting growths were subjected to the following confirmatory tests: 1. Growth on agar slope. No growth after 24 hours' incubation at 37° C. After 48 hours' incubation discrete dewy transparent colonies. 2. Growth in litmus milk. After three weeks' incubation at 37° C. no clotting was observed and the reaction of the medium was alkaline. 3. Growth on litmus-glucose-nutrose-agar. Small circular bluish colonies, the tint becoming more pronounced as the age of the colonies increased. 4. Emulsification. The organism readily emulsified in normal salt. 5. Reaction to specific sera. Wright's macroscopic method was used and the organism was tested side by side with the laboratory stock culture against the serum of an immunised rabbit and also against the serum of

the naturally infected Goat 27. The rabbit was immunised by intraperitoneal injections of killed cultures of a strain of *micrococcus Melitensis* which had been isolated from the spleen of a person suffering from Malta fever by Lamb and Pais some months previously. The results are set forth in the attached table. It will be noticed that the

Table showing Serum Reactions of *Micrococcus Melitensis* isolated from the Milk of Goat 27 and of the Laboratory Stock Culture.

Serum dilutions.	Normal goat serum and M.M. (F.).	Serum of Goat 27 and M.M. (F.).	Normal goat serum and M.M. (L.).	Serum of Goat 27 and M.M. (L.).	Normal rabbit serum and M.M. (F.).	Immune rabbit serum and M.M. (F.).	Normal rabbit serum and M.M. (L.).	Immune rabbit serum and M.M. (L.).	Control Normal M.M. (F.).	Control Normal M.M. (L.).
1 in 20...	+	+	0	+	+	+	0	+		
1 in 40...	+	+	0	+	+	+	0	+		
1 in 80...	0	+	0	+	0	+	0	+		
1 in 160...	0	+	0	+	0	Almost +	0	+		
1 in 320 ..	0	+	0	+	0	0	0	0		
1 in 640...	0	Almost +	0	Almost +	0	0	0	0	No agglutinations	No agglutinations.
1 in 1280...	0	0	0	0	0	0	0	0		

M.M. (F.) = The *micrococcus Melitensis* isolated from the milk of Goat 27.

M.M. (L.) = The laboratory stock culture of *micrococcus Melitensis*.

+ = Complete agglutination.

x = Partial agglutination.

0 = No agglutination.

organism isolated from the milk of Goat 27 was completely agglutinated in a dilution of 1 in 40 by normal goats' serum and by normal rabbits' serum in a dilution of 1 in 20. Strains of *micrococcus Melitensis* which can be agglutinated by relatively high dilution of normal serum are, however, by no means uncommon. The complete correspondence between the organism isolated from the milk of Goat 27 and the laboratory stock culture in the reactions with the higher dilutions of the specific sera employed is sufficiently convincing.

To sum up, the organism isolated from the milk of Goat 27 agglutinates with a specific animal serum in a high dilution, does not ferment glucose, renders milk alkaline without coagulation, gives the characteristic microscopical appearances of *micrococcus Melitensis*, and does not retain the stain by Gram's method. In the words of Major Horrocks, such an organism "may justly be regarded as the *M. Melitensis*."

Owing to the press of official duties at this time of the year I was unable to carry out personally the serum tests for the identification of the organism in question. These were carried out for me by Captain Harvey, director of the Pasteur Institute of India, in his laboratory and I have much pleasure in expressing my gratitude to him for this and many other kindly acts of assistance during this investigation.

Amritsar.

⁴ *Ibid.*, part I.

POST-GRADUATE STUDY AT ANCOATS HOSPITAL, MANCHESTER.—We understand that a series of post-graduate demonstrations will be given by the members of the graduate staff of this hospital at 4.15 P.M. medical and surgical staff of this hospital at 4.15 P.M. during the last two weeks in February and the first two weeks in March. Dr. Richard W. Marsden will take the subject of Diseases of the Chest, commencing on Feb. 23rd, and Dr. F. Craven Moore will deal with Diseases of the Stomach, commencing on Feb. 21st. Mr. E. Stanmore Bishop will discuss various departments of Abdominal Surgery—namely, Uterine Prolapse and Proctitis on Feb. 20th, Urinary Surgery on Feb. 27th, Gall-bladder Surgery on March 6th, and Intestinal Surgery (including the Operative Treatment of Ulcer of the Stomach) on March 13th. All members of the medical profession are invited

³ Reports of the Commission for the Investigation of Mediterranean Fever, Part III.

case which came to Dr. Gordon's knowledge, and which was under the care of Mr. A. C. Bird of Sidmouth, was also not examined microscopically, for the same reason as in the first case. No doubt existed as to the nature of the disease when the question of operation was raised and no recovery apart from operation seemed possible. But in spite of the absence of microscopical confirmation it would probably be conceded that this case was a very important one. Syphilis of the tongue was a common enough disease and might sometimes closely simulate cancer, but syphilitic ulceration of the cervix uteri resembling cancer was a very rare disease, and considering the very careful examination which was carried out in this case it was scarcely conceivable that an error in diagnosis had been made. The patient, who was 52 years of age, began to suffer in January, 1903, from uterine pain and discharge. She had previously enjoyed good health. Her periods had ceased at 49 years. She had had 12 children and one miscarriage between the tenth and eleventh child. There had been no stillbirths. Eight children, including her eldest, are alive and well "so far as she knows." Early in 1903 she had a severe uterine hemorrhage and this was repeated later in the year. Mr. Bird examined her in September, 1903, and found a condition which he diagnosed as malignant ulceration of the cervix. The discharge was then sanguineous and offensive and digital examination caused bleeding. The glands were enlarged in the left groin. The patient had lost flesh and looked cachectic, her appetite was bad, and there was frequent sickness. As she was bleeding when he saw her Mr. Bird put her on an ergot mixture and ordered hot creolin injections each night. When she was fit to travel he sent her to the Great Northern Central Hospital in London, under the care of Dr. G. F. Blacker, who kindly sent the note dictated at the time. The note was as follows:—
 "Examined under an anæsthetic. Nil in abdomen. Per vaginam cervix (vaginal portion) has almost disappeared and there is an ulcer invading it and the posterior wall of the vagina. The tissue of the ulcer breaks down readily and bleeds easily. It is evidently a malignant ulcer. The anterior lip of the cervix is still comparatively intact. Vagina has undergone some senile changes. Uterus appears fairly moveable. Per rectum, thickening felt in right utero-sacral ligament and the ligament is shortened. Left utero-sacral ligament is also thickened and shortened. Growth can apparently be traced out from cervix into the utero-sacral ligaments. Considered inoperable therefore." The patient returned home and soon after, about the end of October, 1903, on the advice of a lady in Sidmouth, began to treat herself with infusion of violets under Mr. Bird's supervision. Every day about 30 fresh violet leaves were washed with cold water, placed in a jug, and a pint of boiling water was poured on them. After 20 minutes the water was poured off and taken internally in the next 24 hours. At the same time, by Mr. Bird's advice, she used hot creolin vaginal injections (a drachm to the pint) each night and took a drachm of Scott's emulsion thrice daily after food. In a week "she felt better," in two months the discharge ceased to be sanguineous, and in six months all pain had left her. She went on with the treatment up to January, 1905, with occasional breaks of a month. During the breaks she said she missed her medicine. No unpleasant symptoms were caused. No considerable hemorrhage occurred again. No slough seemed to have come away. When seen on March 21st, 1905, with Mr. Bird she was a healthy-looking woman without a trace of cachexia, fairly well nourished, but easily tired, although stronger than she had been during her illness. She had no pain or bleeding, the slight vaginal discharge was not at all offensive (creolin injections were still used), her feet, which used to swell, no longer did so, and she was never sick. Her pulse was good, a little tense perhaps. The abdomen was thin and wrinkled but no pelvic growth could be made out by palpation. There were no abnormally large glands in either groin. Per vaginam, the cervix had vanished, being replaced by a dimple from which cicatricial bands radiated; nothing could be felt resembling a growth or an ulcer. There was no trace of tumor and ordinary examination caused no bleeding. More forcible examination did cause make out, seeming curiously contracted. No infiltration or growth could be felt anywhere. She discontinued the infusion at the beginning of September but there had been no return of symptoms. She was well when seen in

January, 1906. The doubt about the nature of these two cases arose solely from the fact of the disappearance of the disease. The next case, however, which was under the care of Mr. H. V. Rake of Fordingbridge, near Salisbury, in which the growth greatly diminished, was one in which the diagnosis was supported by microscopical examination. The patient was a man, aged 63 years, who began to complain of soreness of his tongue in January, 1905. He had had a patch of leucoplakia on the left side of his tongue for seven years and about two years ago had had a "well-marked syphilitic eruption" of copper coloured spots on the right arm. Mr. Rake diagnosed cancer of the tongue and sent him to Salisbury Infirmary where the diagnosis was confirmed and immediate operation was advised. Mr. Rake saw him afterwards on March 16th. He was then pale and ill-looking, the speech was thick, the breath was highly offensive, and there was a hard lump in the left side of the tongue about its middle, just in front of the patch of leucoplakia, covering an area of the size of a shilling, with infiltration of the floor of the mouth, rising to a level with the teeth and fixing the tongue. There were also some glands below the jaw on the left side. The patient refused operation. Infusion of violets was now begun. During the first week of the violet treatment the pain, which had been moderate, became much worse, but afterwards was greatly relieved. The offensiveness of the breath soon became less. A piece of the growth was removed for microscopical examination and pronounced to be epitheliomatous. The patient steadily improved and on July 6th he was a healthy-looking man. His mouth could be opened widely and the tongue easily and fully protruded. On the left side, about half-way along the tongue and just in front of a white patch of leucoplakia, a hard smooth surface about an inch in length and half an inch broad was all that was left of the growth already described. There were a few small glands in the neck. In August, 1905, the growth again became larger and at the end of the year was removed, the disease being far advanced. In this case the reduction, which occurred up to July, in the size of the growth was very striking, but it had been suggested that the infusion only affected inflammatory swelling, perhaps of specific origin, and that the cancer (if cancer it was) remained, minus the inflammation. This was, of course, a very reasonable suggestion, but it could not, Dr. Gordon said, apply to the next case which was under the care of Mr. Russell Coombe and Dr. Gordon, in which there could be no doubt that the tissues which broke down during the administration of the infusion were cancerous and not merely inflammatory. The patient was a man, aged 45 years, and came under the care of Mr. Coombe last March at the Exeter Dispensary. He had then an extensive growth involving the left side of the tongue, the floor of the mouth, and the jaw, appearing externally as two large red bosses on the chin. He dated it from August, 1904. There were profuse salivation and very fetid breath. He was very cachectic. Infusion of violet leaves was given at the end of March. In two weeks the cachexia was less but the centre of the external growth in the skin was sloughing and looked as if "melting out." This sloughing process went on quickly and it seemed as if the whole cancer might be about to come away. The opening led right through the bone into the mouth, so that the movements of the tongue could be seen through it. A piece of the breaking-down tissue was microscopically examined by Dr. R. V. Solly and found to be epithelioma. That the breaking down was not merely coincident with the violet treatment but a consequence of it seemed clear, partly from its unusual character, partly from its following so closely on the commencement of the infusion, and partly from the results of an unfortunate circumstance which perhaps prevented the disappearance then beginning to be hoped for—namely, that the patient became careless and neglected his treatment. In about two weeks the growth had sprouted up again so as almost to fill the opening made by its breaking down. He was now taken into hospital, where once more the breaking-down process set in, the opening became wider, and the peripheral part of the growth began to shrink and flatten. The patient began to open his mouth more widely, to move his tongue, and almost to speak intelligibly. He had now no pain, which, before treatment, had been a trouble some. In spite, however, of persistent treatment, the growth spread at its margin and the glands became involved, so that Dr. Gordon was obliged to discharge him as hopeless. It should

CASE 2.—This case is of interest because it closely simulated tuberculosis of the knee-joint. The patient was a woman, aged 21 years, and was admitted to hospital on Dec. 26th, 1904. The history was as follows. For about three months the patient had been troubled with slight pain in the left knee, but this was not of such severity as to prevent her going about. Five weeks before admission she fell and hurt her left knee and from that time the symptoms became acute. The knee began to swell and was very painful. About two weeks later she began to have starting pains at night. The swelling increased and the pain became more severe and she was sent into hospital by her medical man for operative treatment.

On admission to hospital the left knee was much swollen and was very tender to the touch. The pain was chiefly on the inner aspect of the knee. The swelling was pretty uniform but was slightly more marked on the inner side. It gave one the distinct sense of fluctuation. Starting pains at night were complained of. Movements were limited. The swelling was somewhat of the "leg-of-mutton" shape but there was no crackling elicited on palpating it. There was nothing of importance in her family or social history and her health otherwise was good. The diagnosis lay between tuberculous knee and sarcoma of the lower end of the femur. The patient required sedatives frequently so great was the pain. She was kept under observation for a few days and hot fomentations were applied frequently to the affected knee. No improvement, however, took place. The temperature, which was 100.2° F. on admission, rose to 102.4°, and remained high till after the operation, when it fell to normal. Permission was obtained to operate and to deal with what was found. Under chloroform the knee-joint was incised and the true nature of the condition was ascertained. The limb was consequently amputated about the middle of the thigh. The lower end of the femur was sent to the Clinical Research Association, London, and the report confirmed the diagnosis made. The stump did not heal by first intention but it did not suppurate. Healing was delayed for some considerable time by a serous discharge coming away. Eventually it healed well and the patient was discharged apparently cured on Feb. 25th, 1905—apparently cured, because Dr. Allan found that the disease returned at the upper end of the femur some months afterwards and this proved fatal.

CASE 3.—This case can be dismissed in a few words. The disease occurred in a newly-born child. The child was taken to hospital two days after birth on account of a swelling at the lower end of the right femur. The swelling was pyramidal, the base being below and was somewhat elastic to the feel. The part was examined by means of the x rays and the lower end of the femur was seen to be expanded. The case was apparently one of sarcoma. The child was of such low vitality that operative measures were not deemed justifiable. Death, in fact, supervened two days later (January, 1905).

Remarks by Dr. ALLAN.—The above three cases of sarcoma of the femur came under my notice when resident medical officer at the Ayr County Hospital. They are somewhat uncommon and present several points of interest and peculiarity. In looking at these cases it is interesting to note that they all came under observation within a month of one another. Curiously enough, too, I could find no case of sarcoma of the femur mentioned in the records of cases treated in the hospital during the last 25 years. The above cases show that it may occur at any age from earliest infancy to late adult life. Case 2 is especially interesting because the condition so closely simulated tuberculous disease of the knee-joint. Until the operation it was impossible to be sure of the diagnosis and the history and symptoms strongly suggested tuberculous mischief. Case 3, though not unique, is of great interest as it shows that even at birth pathological growths of so malignant a type may be met with. In conclusion, I beg to tender my thanks to the visiting staff through whose kindness I am permitted to make use of the above cases.

UNIVERSITY OF CAMBRIDGE.—SIR W. H. Broadbent, K.C.V.O., F.R.S., has been appointed an elector to the Downing chair of Medicine; Professor E. A. Schäfer, F.R.S., an elector to the chair of Physiology; and Dr. J. F. Payne an elector to the chair of Pathology.—Downing College will hold an examination for Minor Scholarships in Natural Science on Tuesday, March 6th, and following days. Candidates are directed to apply for information to the tutor, Mr. H. Jackson.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Effects of Violet Infusion on Malignant Growths.

A MEETING of this society was held on Feb. 13th, Mr. A. PEARCE GOULD being in the chair.

Dr. WILLIAM GORDON read a paper on the Effects of Violet Infusion on Malignant Growths. He said that on March 18th, 1905, he had recorded in THE LANCET a case of presumably malignant disease which disappeared during treatment with infusion of violets. Since then, by the kindness of his colleagues and other medical men, he had been enabled to collect a considerable number of cases, some of which had come under his own observation, the rest being watched and described by others. The publication of these cases at the present time would, he hoped, serve two useful purposes. First, it would show the desirability of further inquiry into the action of the infusion, and might help to indicate the direction such an inquiry should take. Secondly, it would tend to correct the mistaken statements which had unfortunately been circulated in the periodical press. He said that he did not propose to discuss here the question of a "cure for cancer." No sensible person acquainted with medicine talked of a "cure" for malignant disease after only a few months of observation. But the results he had to record were remarkable and would probably be held to justify them being brought forward. In considering them it should be remembered (1) that the majority of the cases were already very advanced when submitted to treatment, and (2) that differences in the nature of the growths, in the organs affected, in the patient's constitution, as well as—not improbably—in the varieties of violet plants chosen, the soils they grew in, the way the leaves were used, and possibly even the season in which they were picked, might have helped to determine the differences in the effects. He then related a case of a man, aged 53 years, who had cancer of the tongue. He had been a healthy man and had had no venereal disease. Six months previously he thought that a sharp edge of tooth had hurt the left side of his tongue, and after a time he began to have pain which ran up to his left ear. Later still he had difficulty in opening his mouth. Two hæmorrhages, one to the extent of a pint, occurred recently. He had lost a stone in weight. There was a deep ragged ulcer on the left side of the tongue opposite the last molar tooth, with hard raised edges, very tender, bleeding on examination, and surrounded with much induration, which spread to the gum and anterior pillar of the fauces. No enlarged glands could be felt. He was seen by four surgeons, all of whom diagnosed cancer, and an immediate extensive operation was advised. A microscopical examination was not made because no occasion for it then existed. The patient refused to be operated on and treated himself at home with infusion of violets, beginning it on Nov. 10th, 1904. By Jan. 23rd, 1905—i.e., in about ten weeks—he was so much better that his employers sent him to show himself. The change was extraordinary. He looked well and had gained 32 pounds in weight. The pain had become trifling, he could open his mouth well and protrude his tongue almost naturally; the ulcer was much smaller, the hardness was less, the surrounding infiltration was greatly reduced, and there was no longer any tenderness or inclination to bleed. He said that during the first week of the treatment the pain had been worse but that after that it rapidly became less. On Feb. 20th, the treatment having been continued meanwhile, practically nothing was left of the ulcer but a local loss of substance in the side of the tongue and a narrow hard scar. There was only occasional slight pain. Since then he kept in excellent health, the scar remaining the same and the pain having ceased until December. He then discovered a small growth on the anterior pillar of the fauces at the left side, a little way behind the seat of the former ulcer. It was, however, painless. He was seen on Jan. 16th, 1906. The growth was small, was ulcerating and indurated, but there was little surrounding inflammation; no glands could be felt in the neck. He said that he was using the violet infusion as before and that the growth was no larger than when he found it a month ago. The second

half grains of thyroid extract administered regularly thrice daily.

Dr. F. PARKES WEBER exhibited a case of Stokes-Adams Disorder in a man, aged 56 years. The principal symptoms had been bradycardia and recurrent synopal attacks. There existed considerable cardiac hypertrophy but no evidences of valvular lesion. The pulse averaged 42.—Dr. F. DE HAVILLAND HALL remarked that cases exhibiting this group of symptoms seemed to be more common than was formerly supposed. He divided such cases into those accompanied by attacks of vertigo, those with epileptiform attacks, and those with pseudo comatose attacks. There was usually well-marked arterio-sclerosis associated with a very slow pulse.—Dr. C. W. CHAPMAN remarked that the condition occurred sometimes in younger subjects, as in the case of a man, aged 32 years, under his care.—Dr. ALEXANDER MORISON discussed the various theories suggested to explain the symptoms, and expressed the view that a disorder of the auriculo-ventricular bundles of His hardly explained all the facts.—Dr. J. F. H. BROADBENT thought that cases of Stokes-Adams' disease with arterial sclerosis should be separated from those not so attended—cases, for instance, which followed influenza, mostly in younger subjects.

Dr. WEBER also exhibited two cases of Splenic Enlargement of uncertain origin in two boys, brothers, aged 13 and 10 years respectively.

Mr. FREDERIC BARKER exhibited for Dr. LEONARD G. GUTHRIE a woman, aged 28 years, who presented some of the symptoms of Tabes Dorsalis. She had been ailing about two and a half years and exhibited the Argyll-Robertson and other pupillary changes characteristic of the disorder and had presented some of the sensory changes. The patellar reflexes had at one time been absent but lately they had returned and slight oscillations in the ocular movements raised the question of insular sclerosis, though muscular tremor was absent. Possibly insular sclerosis had affected the posterior columns and the afferent sensory tracts.

Mr. SYMONDS exhibited a woman, now aged 25 years, in whom a Myeloid Sarcoma had been removed from the left lower jaw nine years ago. The patient had a good jaw which carried a serviceable denture and showed no recurrence.—Mr. OUTHBERT S. WALLACE referred to a somewhat similar case of myeloid fibroma where recurrence had occurred nine months later and the patient died soon afterwards.

Mr. SYMONDS also showed a boy, aged 15 years, who had suffered an Extracapsular Fracture of the Neck of the Femur. He was able to walk immediately after the accident and came under treatment for lameness. The skiagram showed typical extracapsular fracture with impaction. Some three months after the accident the neck was chiselled through in the line of fracture and the femur was drawn down. Distinct improvement took place in the axis of the limb, while the movements of the hip-joint remained perfect and the patient could walk without limping.—Mr. A. E. J. BARKER referred to a somewhat similar case.

Mr. SYMONDS also exhibited a man, aged 20 years, with Multiple Exostoses—in all some 90 growths had been counted. The largest, attached to the tibia, was removed as it was causing interference with the knee-joint. The patient also showed congenital absence of the lower end of the ulna with curvature of the radius. Skiagrams showing the condition were exhibited.

Mr. F. O. WALLIS exhibited a case of Dislocation backwards of the Ankle with fracture of the External Malleolus in a woman, aged 47 years, who had fallen down a bank four feet high about two months before admission to Charing Cross Hospital. An x ray photograph showed a fractured fibula with the lower fragment displaced forwards and in contact with the lower end of the upper fragment; there was also a backward dislocation of the ankle. An operation was performed on Jan. 15th, 1905, and the condition of matters had greatly improved.—Mr. SYMONDS referred to a similar case in which he had been obliged to remove part of the fibula.

Mr. WALLIS also showed a case of Fracture at the Surgical Neck of the Humerus, which had been united by staples 14 days after the injury, in a man, aged 25 years.—Mr. SYMONDS congratulated Mr. Wallis on the novelty and success of his method.

Mr. J. HUTCHINSON, jun., showed a case of a rare disease

described as Lymphodermia Perniciosa by Kaposi. The patient, a man, aged 51 years, who had never been out of England, developed lymphatic thickening of the face and neck, the onset being somewhat acute. Vesicles were present, as well as solid oedema of both forearms and "nodes" on the forehead and phalanges of the hand. The condition was spreading and "infective" but no micro-organisms were present in the lymph from the vesicles nor was there leucocytosis. At first the disease was taken for erysipelas but the absence of fever and the subsequent progress showed that it was entirely different. Arsenic had been found in this case to check the progress of the disease.—Dr. WEBER discussed the case and suggested that it might be a case of leukaemia beginning in the skin.

Mr. BARKER exhibited a case of Recurrent Dislocation of the Shoulder in a man, aged 25 years.

Mr. S. MAYNARD SMITH exhibited a case of Suppuration in the Thyroid Gland in a woman, aged 43 years. She had noticed a swelling in the neck for the first time nine months before. The swelling was in the middle line of the neck and of about the size of a walnut. This rapidly increased in size and about three months ago it pointed "like an abscess" and was opened. It was said that gummy material and pus were evacuated. There was no history of syphilis; she had had one child, now alive and well, and no miscarriages.—Mr. JAMES BRANN commented on the rarity of such cases. He did not regard the present case as of either syphilitic or tuberculous origin.—Mr. BARKER suggested suppuration of lymphatic glands adjacent to the thyroid as the origin of the trouble.—Mr. SYMONDS had only seen one case of syphilitic suppuration of the thyroid.—Dr. W. H. KELSON believed tuberculous disease occurred in that position.

Mr. MAYNARD SMITH also exhibited a case of Amputation of the Penis for Epithelioma arising at the Orifice of a Urinary Fistula.

Dr. LEWIS A. SMITH exhibited a case of Recurrent Third Nerve Paralysis in a single woman, aged 30 years. She was quite well up to the age of seven years, when she had enteric fever and had never been strong since. At the age of 14 years she was suddenly attacked with right third nerve paralysis and she had had similar attacks at the age of 18 years and 25 years, recovering on each occasion in a few weeks. The present attack began three weeks ago with sudden right hemiparesis and vomiting. The right eyelid "dropped" on the third day and there was complete paralysis of the third nerve on the right side as it existed at the present time.—Mr. HUTCHINSON and Dr. J. S. RISLEY ROSEBELL discussed the case and remarked on the rarity of the condition; but Dr. SMITH believed that 25 such cases had been recorded.

CLINICAL SOCIETY OF LONDON.

The Surgical Treatment of Cancer of the Stomach.

A MEETING of this society was held on Feb. 9th, Mr. H. H. CLUTTON, the President, being in the chair.

Mr. B. G. A. MOYNIHAN (Leeds) read a paper on the Surgical Treatment of Carcinoma of the Stomach based on the records of 59 operations for this condition during the last few years. The operations performed were: gastro-enterostomy, 35 cases with five deaths; gastrectomy, ten cases with three deaths; gastrostomy, five cases with no deaths; jejunostomy, three cases with no deaths; and exploratory laparotomy, six cases with one death. Dealing first with gastro-enterostomy, he considered that this operation was indicated in cases with an irremovable growth causing pyloric obstruction; but where there was no obstruction to the outlet of the stomach the operation did not give relief commensurate with its risks. He had found that, in suitable cases, gastro-enterostomy prolonged the patients' lives and allowed them to spend their last weeks or months in tolerable comfort. With regard to gastrectomy, he was convinced that modern improvements in technique had rendered the radical operation applicable to a wider range of cases than formerly, not only as a means of complete cure but as an operation to be undertaken deliberately in preference to gastro-enterostomy as a palliative measure. In five cases where the growth had caused obstruction at the cardiac end of the stomach Mr. Moynihan had performed gastrostomy, adopting Senn's method in four cases and Frank's method in one. Jejunostomy was adapted to those cases in which gastro-enterostomy was impossible by reason of the extensive involvement of the

be noted that this case was alcoholic and it was possible that in alcoholic subjects the violet infusion might be less useful than in others. The importance of this case depended on the evidence it afforded that violet infusion could definitely affect cancerous tissue. These four cases seemed to Dr. Gordon to form a remarkable series. Two growths with all the appearance and characters of cancer disappeared and the only doubt of their nature arose from this disappearance. One of them recurred. A third case, with the microscopical as well as the general appearance of cancer, greatly diminished in size (although only for a time), whilst the fourth case indicated that the infusion could act definitely on actual cancerous tissue. Dr. Gordon then proceeded to give briefer clinical details of 43 more cases, making 47 in all. He then dealt with the mode of using the infusion. In most of the recorded cases the infusion had been used both locally and internally. About 50 good-sized freshly-picked garden-grown violet leaves with their stalks (the "Princess of Wales" variety was used in Case 1) were put in a jug and a pint of boiling water was poured on them. The jug was set aside in a cool place for 12 hours, say overnight, and then the green liquid was strained off. Half of this liquid was taken internally, either at once or in divided doses during the day. The other half was used to make fomentations or other local applications adapted to the seat of the cancer. This must be done daily as a regular routine for months. Sometimes larger doses of the infusion or a stronger infusion had been given. Sometimes a shorter, sometimes a longer, period of sojourn had been used in the preparation of it. In one case a glucoside from the leaves had been used instead. Large doses must be watched, as they might cause unpleasant symptoms. The local treatment of breast cancer was by fomentations or even poultices of the leaves. That of mouth cancer was by frequent gargling with the infusion. That of rectal and uterine cases was by local injections of it. The infusion had in some cases given rise to anorexia, diarrhoea, temporary increase of pain, rash, shortness of breath, and faintness. It was suggested that the glucoside might prove to be the active principle of the infusion. In conclusion he said: 1. The drug *properly supervised* was not dangerous. 2. It had a definite influence on malignant growths in some cases. 3. Pain was sometimes remarkably relieved. 4. Fætor was sometimes remarkably lessened. 5. The general condition was sometimes remarkably improved. 6. Sometimes the growth was wholly unaffected. 7. Sometimes it became (sometimes temporarily) arrested. 8. Sometimes it became reduced in size. This might be only temporary. 9. If the growth was extensive the drug had seemed unable to check it. 10. After a time the drug had sometimes seemed to lose its effect. 11. Some small growths had even disappeared, but the cases of this were very few so far and the nature of some was open to question. 12. It would be utterly unjustifiable to advise this treatment as a substitute for possible operation according to present experience. 13. It was desirable to try it after operation to ascertain if it could reduce the frequency of recurrence. 14. It was desirable to try it in inoperable cases to ascertain: (a) if it could cause disappearance of the growth; (b) if it could bring the growth within the reach of operation; and (c) if it could at least alleviate symptoms. 15. It was desirable that all cases should, when possible, be examined microscopically when so treated. 16. It was possible that the glucoside was the chief active principle of the leaves.

Mr. PEARCE GOULD said that this subject was one to be approached with great caution, for it was beset with many difficulties. In the first place a sharp line of distinction must be drawn between those cases which were improved by the relief of their symptoms and those in which an actual reduction in the size of the growth took place, and the improvement in the relief of symptoms should not be allowed to obscure the aspect of the case. Secondly, it was most difficult to discuss the treatment of a disease which under natural conditions ran such a varied course. He could, he thought, parallel nearly every case which had been quoted in the paper from a selection of cases in which there had been no treatment whatever. Arrests of malignant growths were familiar to all and the rapidity of growth often altered in a striking manner; an active scirrhus of the breast might become atrophic. Passing to the cases quoted in the paper he doubted if the first case was in fact a case of cancer, for although the disease was extensive and ulceration was present yet the glands were not enlarged. In the second case, again, in which there was ulceration of the posterior lip of the cervix, he also was in doubt, for the

distribution of the disease as described was certainly unusual. Such cases raised the question whether it was possible to diagnose a case of cancer by the clinical features alone. Even in Dr. Gordon's third case, in which there was a microscopical examination of the growth, there were certain features which made him doubt if it was a case of cancer. When it was remembered that until quite recently actinomycosis had been confused with cancer, it was quite possible that there were some conditions which were not even yet recognised and which might be mistaken for cancer. He had tried infusion of violets in the Middlesex Hospital but without success. In one case of cancer of the breast with a sloughing ulcer the growth had diminished in size and the ulcer cleaned up, but no further improvement took place. His opinion was that there was something in violet leaves which did tend sometimes to relieve certain cases of cancer.

Dr. NORMAN MOORE said that he entirely agreed with the last speaker that the first two cases quoted in the paper were not cases of cancer and could not be used in a scientific discussion of the subject. He would agree also with Mr. Pearce Gould that they ought not to presume that they were acquainted with every form of cancer, for it was but a comparatively short time that they had been able to recognise the variations in the characters of new growths. Further, he did not think it was possible to say from the microscopical characters alone whether a growth was malignant; such characters must be considered in connexion with the history and clinical course of the disease. With regard to the case of annular growth of the rectum quoted in the paper he doubted whether that was carcinomatous. The growth recurred at the anus and in his experience it was quite exceptional for a malignant growth to recur at another point in the alimentary canal. He then alluded to the small amount of pain from which a patient with extensive malignant disease might suffer; pain when present was the consequence of pressure or inflammation. For this reason, therefore, he could not agree that the relief of pain was any indication of improvement. He recalled many cases of cancer of the œsophagus in which great improvement had taken place by proper feeding in hospital and yet the growth had not been in any way arrested. The variations in the rate of growth in cases of cancer were well known. The cases quoted in the paper did but illustrate the natural course of the disease and he attached no therapeutic importance to the remedy used.

Mr. T. J. FAULDER asked whether any palliative measures had been applied, especially in the cases of cancer of the rectum, for it was well known that considerable improvement often took place. After colotomy a seemingly inoperable cancer might become operable.

Mr. L. S. DUDGEON asked whether the effects of infusion of violets had been tried in inflammatory conditions. He mentioned a case in which inflammatory tissue had formed a very considerable portion of an apparently large malignant growth.

Dr. GORDON replied.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 12th, Mr. CHARTERS J. SYMONDS, one of the Vice-Presidents, being in the chair.

Dr. J. PORTER PARKINSON showed a woman, aged 46 years, who was suffering from Adiposis Dolorosa affecting both arms which measured 14½ inches in circumference and were painful and tender when touched. She had an alcoholic history, slight signs of pulmonary tuberculosis, early hepatic cirrhosis, and traces of albumin and sugar in the urine. The thyroid gland could not be felt and it was proposed to adopt treatment by thyroid extract. The adiposis was of five years' duration.

Dr. PARKINSON also exhibited a case of Sporadic Cretinism which had been under treatment for five years. The patient, a female, was now eight and a half years old and 3 feet 10½ inches in height; she was fairly intelligent, being able to read a few words and to count, but was still in the infants' class at school. When first seen she was a marked example of cretinism both in intelligence and conformation but had made great improvement under one and a

hospital records as quite worthless unless the point under discussion had been specially looked for. He never performed entero-ano-stomosis, as in his operation this was quite impossible, the upper end of the opening being over an inch below the duodeno-jejunal flexure. He always used clamps and was convinced of the saving in time effected by them. He removed all glands whether they were obviously cancerous or not.

OBSTETRICAL SOCIETY OF LONDON.

Ovariectomy during Labour.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 7th, Dr. W. R. DAKIN, the President, being in the chair.

Dr. HERBERT R. SPENCER recorded the case of a woman, aged 24 years, on whom he had performed Ovariectomy during Labour when a little over eight months pregnant with her first child. The cyst had been tapped three weeks previously. At the operation extensive adhesions were found both to the abdominal wall in the neighbourhood of the paracete and to the omentum at the upper part of the cyst. The tumour was a thin-walled cyst of the left ovary. It was multilocular and had ruptured at the lower part, allowing fluid to escape into the peritoneal cavity. Strong labour pains had set in an hour before the operation. After the operation was over the cervix was found to be dilated fully and the head was low down in the pelvis. A female child, weighing six pounds ten ounces, was delivered by forceps and the placenta a few minutes later. There was no post-partum hemorrhage. Mother and child recovered well, the mother suckling her infant. Dr. Spencer strongly condemned the tapping of ovarian cysts unless they were undoubtedly malignant or unless the patient was suffering acutely from some pulmonary affection or grave disease independent of the tumour. He discussed the treatment to be adopted when a woman is in labour with a large ovarian tumour which does not obstruct the pelvis. Owing to the dangers incidental to rupture of the tumour such cases needed prompt treatment. There were three alternatives: (1) to deliver by the natural passage, dilating the canal if necessary, and then to perform ovariectomy; (2) to perform ovariectomy and to leave the delivery to nature; and (3) to perform ovariectomy at the end of the first stage of labour and immediately afterwards to deliver by forceps while the patient was under the anæsthetic. In suitable circumstances the two operations might with advantage be performed simultaneously. Each of these three methods might properly be performed and possessed special advantages in particular circumstances—the first in avoiding the injurious effects of the anæsthetic on the foetus and in facilitating the operation of ovariectomy and the ligation of the pedicle; the second in avoiding the maternal and foetal injuries which were so common with instrumental deliveries; and the third, of which the case here recorded is an example, in that the patient was delivered of her child and her tumour while under the same anæsthetic. The ovariectomy could usually be performed with more complete asepsis just before delivery and the risk of rupture of the large cyst during the expulsive pains was lessened.—Dr. G. E. HERMAN said that he agreed with the main contentions put forward by Dr. Spencer.

Dr. HERWOOD SMITH showed a Radiograph taken in the thirty-sixth week of utero-gestation. He considered that such photographs might prove of great service in determining the presence of twins, or varieties of presentation, besides any deformity of the pelvis.

Dr. JOHN PHILLIPS showed a specimen removed by vaginal hysterectomy from a woman, aged 21 years, on account of recurrent bleeding for three months following a hydatidiform mole. By digital exploration of the uterus a softish flattened swelling, of the size of a bean, was detected high up on the posterior wall of the uterus. A small piece which was removed for examination proved it to be chorion-epithelioma. Some febrile symptoms occurred during the first fortnight after operation but complete recovery followed. The patient had remained well for a year.—Dr. C. J. CULLINGWORTH expressed the hope that the history of the case would be supplemented after the lapse of another 12 or 18 months.—Mr. J. D. MACCOLL mentioned that in a case which he had reported in conjunction with Dr. Cuthbert Lockyer and Dr. R. Hamilton Bell the patient was alive and well four years and seven months after the operation.

The PRESIDENT then delivered the annual address.

The following are the officers and the members of the council for 1926:—President: Dr. W. R. DAKIN. Vice-Presidents: Dr. Montagu Handfield-Jones, Dr. Arnold Routh, Sir William Japp Sinclair, and Mr. Albert C. Butler-Smythe. Treasurer: Dr. George Ernest Herman. Editor of Transactions: Dr. Herbert R. Spencer. Honorary Secretaries: Dr. Robert Boxall and Dr. Arthur H. N. Lewers. Honorary Librarian: Dr. William John Gow. Other Members of Council: Dr. Henry Russell Andrews, Dr. Charles James Callingham, Mr. Ernest Rumley Dawson, Dr. George Eastes, Dr. Thomas W. Eden, Mr. John Henry Ewart, Dr. John Shields Fairbairn, Mr. William Sampson Handley, Dr. John Benjamin Hellier, Dr. John Martin Maqro Kerr, Dr. Arnold W. W. Lea, Dr. Cuthbert Lockyer, Dr. John Phillips, Dr. Charles Hubert Roberts, Dr. Mary Ann Dacomb Scharlieb, Dr. Walter C. Swayne, Mr. James Henry Targett, and Dr. Thomas Wilson.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases and Specimens.

A CLINICAL meeting of this society was held on Feb. 8th, Mr. CHARLES J. OLBMAN, Vice-President, being in the chair.

Mr. ARNOLD LAWSON and Mr. GEORGE COATS showed preparations from a case of Congenital Anterior Staphyloma previously brought before the society by Mr. Lawson. The eye had spontaneously ruptured six weeks later. The central portion of the cornea was thinned and had a cicatricial appearance. The cornea was perforated with a knuckle of retina caught in it. The lens capsule and iris were adherent to the back of the cornea. Owing to stretching the ciliary processes, pars plana, ora serrata, and anterior part of the choroid were carried forwards with the cornea. Owing to the former attachment of the ciliary body to the sclera this had been left in its normal position. Thus the ciliary processes were further forwards than the termination of Descemet's membrane and the ora serrata was actually in front of the ciliary muscle. Only one other case of the kind had been described similar to this one. The reason of this displacement was due to the fact that in foetal life the inner layers of the uvea were less intimately connected with the outer than is the case after birth, and the same occurs in many of the lower animals, especially in birds. The staphyloma in this case was believed to be due certainly to intra-uterine inflammation and perforation of the cornea.

Mr. W. T. HOLMES SMICER showed a patient, aged 48 years, who had always been short-sighted. The left eye had been blind ever since an injury he had received 30 years ago and the right eye failed in 1901 and now showed total posterior synechia and vision was entirely lost. The left eye had a corneal opacity and tremulous iris, the lens was tilted and slightly dislocated backwards, it was quite opaque, and there was no fundus reflex. Vision equalled perception of light and the projection was good. On March 3rd, 1903, a needle was introduced behind the ciliary body and the lens was pushed backwards. Sight was at once obtained and it had since improved, so that he was now able to see 20. There was a large area of myopic atrophy of the choroid about the disc and the shrunken lens was visible at the bottom of the vitreous.

Mr. SMICER also showed a case of Superficial Punctate Deposit on the Cornea. The patient was a girl, aged 16 years, whose right eye was attacked with interstitial keratitis in 1897. She became deaf in 1902 and she had an attack of interstitial keratitis in the left eye in 1905. The latter was severe and led to much opacity and to the development of salmon patches in two places and a deposit of keratitis punctata at the back of the cornea. The left cornea had cleared considerably; there were some deep opacity near the centre and numerous small brown or dirty white dots, exactly like keratitis punctata, but they were evidently close to the surface and in front of the old interstitial opacity.

Mr. LUDFORD COOPER showed a girl, aged 11 years, suffering from Elephantiasis Neuromatosa. There was much deformity of the right upper eyelid and temporal region. The lid was pendulous and all its structures were greatly hypertrophied. The lid was also considerably everted. The patient was unable to lift it and it could with difficulty be raised so that the small shrunken globe beneath it could

stomach and where gastrectomy was contra-indicated by the presence of secondary deposits. It was chiefly of importance when the prolongation of life, for even a brief time, was of great moment. He deprecated the prevalent opinion that an exploratory laparotomy "to confirm the diagnosis" was devoid of risk. Cases where the diagnosis was in need of operative confirmation were those where close scrutiny and handling of the parts were necessary; where the condition could be recognised by merely inserting a finger within the abdomen the clinical diagnosis as a rule required no corroboration. Mr. Moynihan drew attention to the frequent incidence of cancer at the pyloric end of the stomach and to the regular invasion of the curvatures, both these facts being well brought out in his series. Between the pyloric and pre-pyloric forms of growth he believed that a diagnosis was often possible by careful attention to the onward march of symptoms. As bearing on the frequency of malignant transformation of simple ulcer, he had found that out of 39 cases of carcinoma of the stomach where attention was directed to this point 24 gave a previous history indicative of gastric ulcer. He noted the fact that both ulcer and cancer affected the same portion of the stomach wall and he was inclined to assume that a chronic inflammatory condition frequently preceded the cancerous stage in the stomach as in other parts of the body. He believed that the discouraging results of the surgical treatment of gastric carcinoma were due to the fact that the insidious onset of the disease rendered early diagnosis far from easy, but he hoped that in the future by a careful application of clinical methods and a wider recognition of early symptoms the surgeon would be more often called upon to explore in order to make a diagnosis rather than to confirm one arrived at by waiting until too late.

The PRESIDENT commented on the large number of cases of carcinoma of the stomach dealt with by the surgeons of Leeds as compared with those seen by surgeons in London.

Mr. A. W. MAYO ROBSON referred to a paper that he had published on the Importance of an Early Diagnosis of Cancer of the Stomach,¹ in which he had expressed views coinciding with those of Mr. Moynihan. Mr. Robson had performed 120 operations on the stomach for cancer and 80 of these had been performed during the past ten years since the technique of gastric surgery had been brought nearer to perfection. He laid stress on the fact that cancer of the stomach, like carcinoma elsewhere, was at first a local disease, hence it followed that an early diagnosis was of prime importance. Whenever a patient at or after middle life complained of gastric symptoms accompanied by loss of weight and by anæmia, which failed to yield to treatment within a few weeks, the possibility of cancer of the stomach should be recognised and a surgical consultation held with a view to clearing up the diagnosis by laparotomy, an operation which at an early period of the disease was almost devoid of risk. Of ten cases in which he had performed partial gastrectomy for cancer eight had recovered, and of these one was living and well six years later, one five years, one three and a half years, and one two years; one had recurrence after four and a quarter years of good health, and one after two years. Two had only lived eight and three months respectively. Even if the disease proved too extensive for removal a posterior gastro-enterostomy was capable of giving great relief and that with a very small risk, for out of 26 posterior gastro-enterostomies which he had performed for cancer during the past ten years 25 had recovered and lived for considerable periods or were living at the present time. Of these one lived over three years and was then operated on again as the growth had invaded the new opening; one was living four years later, and another three and a half years later; one had a gastrectomy after gastro-enterostomy and lived for two years; one was living and well one and a half years after; one lived a year and then had another operation as the new opening was becoming invaded by the growth; one was living and well now, a year later, and another eight months; one lived 12 months; three lived 11 months; others lived eight months, four months, and three months respectively; the remainder were living but had only been operated on within a few months, excepting one who had succumbed to hæmatemesis in the second month after operation. The relief in these cases was a very real

one so long as the new opening remained free from obstruction by disease. Even where the disease was too extensive for gastro-enterostomy the operation of jejunostomy by the method which Mr. Robson had described at the Royal Medical and Chirurgical Society on April 11th, 1905, might prolong life for a considerable period. In one case a patient had lived for 12 months (10 or 11 months in comfort) and in another the patient was living eight months after operation, yet in both of these cases every inch of the stomach appeared at the time to be the seat of cancer. When the disease was at the cardiac end of the stomach and irremovable a gastrostomy ought to be performed with very little risk, as out of 19 cases 18 had recovered and lived for varying periods, two of them over a year. Mr. Robson also referred to the fact that in a number of cases presenting every appearance of cancer, both in the character of the tumour and in glandular involvement, a gastro-enterostomy had been followed by apparent cure, as the patients were well years later, one nine years and others several years. These cases, he believed, were simple inflammatory tumours around chronic ulcers and he thought such cases accounted for some of the supposed cures by various methods, such as injections of drugs and serums. Referring to the predisposing influence of chronic ulcer of the stomach to cancer he mentioned that in 59.3 per cent. of cases of cancer of the stomach on which he had operated the long history of painful dyspepsia suggested the possibility of ulcer having preceded the onset of malignant disease.

Mr. LEONARD A. BIDWELL advocated the performance of an exploratory laparotomy at one time and a gastro-enterostomy later, after two weeks' interval. The last five cases he had performed in this way had been perfectly successful, although one case died seven weeks later from hæmatemesis due to new ulcers which had formed in the stomach at some distance from the sutures. For cancer of the cardiac end he had found Mr. Charters Symonds's tubes gave better results than gastrostomy.

Dr. F. DE HAVILLAND HALL emphasised the importance of early diagnosis and advised an early surgical consultation. In patients over 50 years of age who were the subjects of anæmia gastric cancer should always be suspected.

Dr. A. E. GARROD recalled the fact that the late Dr. Andrew used to say that many of the cases diagnosed as pernicious anæmia turned out to be cases of cancer of the stomach.

Dr. JOHN FAWCETT was doubtful about the alleged importance of gastric ulcer as a precursor to cancer. It was not supported by an analysis of the records of Guy's Hospital. Unfortunately, the diagnosis of both complaints was obscure. Carcinoma of the cardiac end often started in the stomach, as shown by the histological examination and not in the œsophagus, as was more commonly believed.

Mr. JAMES BERRY, referring to the technique of operation, asked Mr. Moynihan whether he performed gastrectomy without a previous gastro-enterostomy or whether he was in the habit of performing an entero-anastomosis at the same time. He (Mr. Berry) approved the use of clamps.

Dr. A. E. T. LONGHURST was glad to hear that cancer was a local disease. He also emphasised the importance of early investigation and diagnosis.

Mr. F. S. EVE asked what was the usual practice in regard to enlarged glands at the back of the abdomen which were frequently inflammatory and not malignant. He agreed that carcinoma in the pre-pyloric portion of the stomach sometimes gave rise to symptoms resembling pyloric cancer. The clinical evidences of cancer having been preceded by simple ulcer were not very convincing.

Mr. G. H. MAKINS thought that the value claimed for gastro-enterostomy should be discounted by the discomfort suffered by the patients after operation and for several months before their death. The duration of life, which was rarely longer than a year, might be a simple, but it was not always an accurate, test of success.

Mr. MOYNIHAN, in reply, said that it would be well if the practice that obtained in the north of sending gastric cases to the physician only if a surgeon considered operation inadvisable were introduced into London. He always removed the growth straight away whenever possible without a preliminary gastro-enterostomy. As to the question of ulcer in the etiology of cancer, in over 50 per cent. of his cases ulcer had been diagnosed by the medical attendant years before the cancerous condition developed. In his opinion chronic dyspepsia was often due to ulcer, vomiting was infrequent in this condition, and hæmatemesis rarer still. He regarded

that a considerable caloric value was thus obtained and this, as shown by the tables, meant a saving of the body protein.—After Dr. H. M. CROUCH, Dr. JAMES RITCHIE, Dr. G. LOVELL, GULLAND, and Mr. C. W. CATHCART had spoken, the PRESIDENT said that he employed rectal feeding very often and would be very sorry to be deprived of its use. He thought that it had a very great value and often tided a patient over a crisis. It relieved thirst and the feeling of exhaustion and was to be used in cases of emergency.—Dr. BORD, in reply, said that he was not prepared to treat all cases of gastric ulcer by rectal feeding. He had given saline infusions by the bowels for four or five days in acute cases to the exclusion of everything else and found such treatment very useful. The use of large enemata quenched thirst very well, while small enemata rather increased thirst.

Mr. CATHCART read a paper on Bier's Method of Treating Acute Inflammation by Passive Congestion. He said that surgeons recognised that acute inflammation and suppuration in operation wounds made through unbroken skin were complications which need not arise. Although Lister's method had prevented the onset of an incalculable amount of suppurative disease, it could do comparatively little to cure suppurative disease when it was actually in progress. When pyogenic organisms had become lodged in the body they were safe from the weapons which could have destroyed them when outside. Surgeons therefore had to deal with many forms of suppurative inflammation which they had no power to prevent, such as whitlows, osteomyelitis, injuries of bones, joints, or soft parts infected before the patient sought advice. In all such cases the agents which most effectively attacked the invading organisms were the cells and fluids of the invaded part, and that surgeon succeeded best who best aided those weapons of nature. Bier looked upon inflammation as a curative agent which ought to be encouraged and utilised rather than opposed and thwarted, and based upon this theory he had devised a practical method of treating suppurative diseases which was astonishingly successful and no less simple. By a piece of elastic bandage properly applied the surgeon was enabled to do nearly, if not quite, as much to cure established septic inflammation of the extremities as antiseptic methods had done to prevent them. Mr. Cathcart felt certain that the method would before long be recognised as a standard method of treatment. The bandage was always applied at a considerable distance above the seat of injury—e.g., in a whitlow it would be applied round the upper arm; if a foot, then to the thigh. The bandage was put on sufficiently tight to interfere with the venous return but not so tight as to more than diminish the arterial flow. In acute cases the pressure was very light. The pulse below the bandage should be easily felt and the limb should be warm. One great test of the proper degree of tightness was the relief of pain. It was not always easy to determine the exact degree of tightness desirable. After a few minutes the whole limb began to swell and the fiery red colour, formerly limited to, say, the hand and wrist, extended now up to the bandage. When this oedema was well established serum escaped freely from any wound which might be present. There must be nothing tight below the bandage. Severe cases should be treated in bed. In bad cases the passive congestion should be kept up for 22 out of the 24 hours and this might be diminished by degrees to from eight to ten hours. The position of the bandage should be changed after about ten hours in one place. In parts of the body (e.g., the shoulder) where there was no room to change the position of the bandage Bier recommended that the congestion should not be kept up longer than from eight to ten hours. In the intervals of relaxation the limb should be raised to favour absorption. As a general rule the patient was soon eased of pain and felt better, the pulse improved, and the temperature fell. This fall occurred very quickly when the cause was due merely to absorption of poison from the inflamed area. As the inflamed area improved by the use of the bandage it responded less and less to constriction on the limb until the reaction was almost as little as it would be in health. After convalescence had set in progress seemed to go on faster without artificial aid. Pus should be let out but the incisions need not be extensive. If blisters appeared the bandage had either been too tight or suppuration had occurred and must be relieved. Bier insisted on great care during the first two days. If the bandage were too slack it did no good, if too tight harm resulted. In the treatment of tuberculous cases the congestion should only be kept up for one or two hours daily

and in these cyanosis but no oedema resulted, while in acute inflammation the congestion was prolonged for the greater part of the 24 hours. Mr. Cathcart then quoted several typical cases treated successfully by Bier, as the disappearance of abscesses under passive congestion or their transformation into cold ones, acutely inflamed joints (rheumatic or septic), suppurative inflammation of sheath tendons, and acute osteomyelitis. In whitlows and suppuration of tendon sheaths Bier found that numerous small incisions gave all the outlet required with a minimum of injury to important structures and subsequent development of scar tissue. As to the behaviour of suppurating surfaces under passive congestion the pus became increased in quantity and thinner, and its secretion soon ended, sloughing tissue was thrown off or portions of tissue recovered which apparently would have died under the usual methods of treatment. As regards joints in which there might be a fistulous opening discharging pus the pus was made to flow every day by passive movement but existing openings were not enlarged and the joints were not drained. An unopened joint containing pus was punctured with a fine needle merely for diagnostic purposes but was neither opened nor drained. Reliance was placed entirely on passive congestion. Gentle passive movements of the joint were commenced as soon as the anæsthetic effects of passive congestion permitted, generally in a few hours. This combination of early movement with passive congestion had brought about a complete restoration of function in even the most severe cases of suppuration in joints. Out of 22 cases of suppurative inflammation of tendon sheaths treated by passive congestion 14 recovered with sound tendons. Of 14 cases of acute suppurative osteomyelitis treated by Bier, six healed without necrosis, five with very little necrosis, two had extensive necrosis, and one patient died from pyæmia. Bier had applied his bandage to the head and neck as in the treatment of acute suppurative inflammation of the middle ear. Mr. Cathcart's own experience of the method had been on the whole not only satisfactory but surprisingly good. He had treated such cases as suppurative inflammation of the tendon sheath of the little finger, another affecting the hand and forearm of a workman; a more striking case of gonorrhœal rheumatism of the knee; a case of nodes of the tibia with severe wearing pain which was relieved to such an extent that no operation was necessary; a case of cellulitis of the leg where the pain was relieved in ten minutes; a case of chronic septic ulceration of the foot resembling moist gangrene; and many other minor cases. Mr. Cathcart then discussed various ways in which the treatment could be explained in action as well as other modes of treating similar conditions, but though each method might have its advantages yet the most efficient seemed to be that of passive congestion.—Mr. G. A. BERRY said that the induction of passive congestion had been very successful in diminishing pain and in hastening the cure of many inflammations of the eye. For that purpose an irritant called diionise was employed and it was useless unless it produced an excessive amount of oedema. He also referred to the use of saline solutions injected under the conjunctiva for the relief of pain.—Mr. H. ALEXIS THOMSON, Mr. HAROLD J. STILES, Mr. G. SCOTT CARMICHAEL, and Mr. J. W. STRUTHERS took part in the discussion which followed.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 7th, Mr. T. Geraty being in the chair.—Dr. W. B. Ransom showed a married woman, aged 35 years, the subject of Spleno-Medullary Leucocythæmia. Treatment two years ago with liquor arsenicalis up to half a drachm daily resulted in a diminution of the leucocytes from 252,000 to 46,800 per cubic millimetre. Again becoming an in-patient in November, 1905, liquor arsenicalis was given in five-minim doses and the x rays were applied for ten minutes daily over the enormous spleen. 12 days after admission a blood count showed: red blood corpuscles, 3,200,000 per cubic millimetre; white blood corpuscles, 160,000 per cubic millimetre; and hæmoglobin 45 per cent.; a month later there were respectively 2,400,000, 45,000, and 35 per cent.; a month later still, 3,600,000, 8500, and 70 per cent.; the condition on discharge being 5,600,000, 6520, and 78 per cent., or practically normal. The blood still contained myelocytes and nucleated red corpuscles but the patient felt immensely better. The spleen, though still large, had shrunk markedly. Her weight had fallen during the first month but the loss had all been recovered since and the girth of the

be seen. The lens was opaque but the tension was normal. The outer and lower portions of the frontal bone and of the squamous portion of the temporal bone were much more prominent on the affected side. The condition was congenital and was slowly increasing.

Mr. E. E. HENDERSON showed a woman, aged 29 years, who had a growth on the Upper Palpebral Conjunctiva. For several weeks she had noticed something moveable beneath her upper lid and for three days it had protruded. An oval mass was found about 2.5 centimetres long and 1 centimetre broad. Its surface was smooth and vascular and it was attached to the fornix by a strip of conjunctiva containing vessels. It was thought to be tuberculous.

Mr. SYDNEY STEPHENSON showed a boy, aged nine years, who had Two Detachments of the Retina in One Eye, one above and the other below. The tension was increased and the vision was bare perception of light. Transillumination showed that light passed readily through both detachments. The other eye was myopic, with some vitreous opacities. There were an obscure history of injury and a doubtful history of tubercle in the family. The question was one of diagnosis, though it was considered to be of a tuberculous nature by Mr. Stephenson.

Mr. H. H. B. CUNNINGHAM showed a girl, aged five years, whose sight was noticed to be defective at school. In both eyes the lens was luxated, but more distinctly in the right. There was no coloboma in either iris or choroid. The right eye was myopic, about 8 D., and the left about 3 D., with some astigmatism in both.

Mr. A. STANFORD MORTON showed the drawing of a case of Staphylococcal Posticum Verum (Weiss).

Mr. E. TREACHER COLLINS showed a case of Coloboma of the Iris, with a Bridge across it.

Mr. ARNOLD LAWSON and Dr. G. A. SUTHERLAND showed two cases. In one of them there was Persistent Edema of Both Eyelids and the other showed a Divergent Strabismus with Associated Lid Movements.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Rectal Alimentation.—Treatment of Acute Inflammation by Passive Congestion.

A MEETING of this society was held on Feb. 7th, Dr. J. O. AFFLECK, the President, being in the chair.

Dr. W. ALLAN JAMIESON exhibited a case of Extra-genital Chancre. It occurred on the chin of a young woman. The submaxillary and cervical glands were enlarged and a macular rash appeared on the body. There was a history of two months' duration and the patient admitted having been kissed.

Dr. NORMAN WALKER showed a boy, aged five years, suffering from Melanoma.

Mr. J. M. COTTERILL showed (1) Fibro-sarcoma of the Eighth Nerve removed from the Cerebello-pontine Angle (a large part of the cerebellum removed for the purpose of exposing the growth was also shown); and (2), (3), and (4) specimens of Enlarged Prostate removed by Suprapubic Prostatectomy.

Dr. F. D. BOYD read a communication on Rectal Alimentation. He pointed out that rectal feeding was so universally in use in clinical medicine that it was surprising that at the present day we had not more satisfactory and accurate data on which to gauge its value. While a good deal of work had been done on the subject much of it was fragmentary. The present research had been undertaken with a view of estimating the influence which this method of alimentation had upon the metabolic processes of the body. The observations were carried out in patients suffering from gastric ulcer in whom a period of gastric rest seemed necessary as a therapeutic measure. The patients were kept absolutely at rest and the nourishment selected was given in the form of an enema every six hours. Tables were shown by means of the lantern to illustrate the results obtained. Dealing with the absorption and metabolism of albumin Leube, Ewald, and Huber's results were discussed. In the six cases on which Dr. Boyd had made observations the absorption of proteid was found to be very poor. In no case did it exceed 2.22 grammes of nitrogen per diem and in most of the cases was much below this figure. The caloric value of the proteid absorbed gave a maximum of 56 calories, the average being considerably lower. When a small amount of proteid was

given in the injection the absorption was as good as when a large amount was used. When the absorption of nitrogen was considered as per kilogramme of body weight it was found to be only 0.029 gramme per kilogramme, an absorption far below that of exceptional individuals on a nitrogen poor diet in whom nutritive balance was kept up, as in cases recorded by Siven, Albu, and other observers. The nitrogen balance in the cases under rectal feeding showed a marked negative balance; there was, in fact, considerable tissue nitrogen being used. From the observations it was concluded that proteid food, even when predigested and with salt added, was very poorly absorbed in rectal feeding; that the albumin of eggs, as so constantly used in rectal feeding, was an expensive and unsatisfactory foodstuff; and that the absorption of proteid varied widely in different individuals. Dealing with fat, Dr. Boyd referred to the work of Rosenstein, Munk, Denebar, and others. The results obtained in the cases under discussion differed somewhat from accepted views. In some of the cases a considerable absorption of fat had been obtained when given in a natural emulsion, such as the yolk of egg. The absorption ranged from 51 to 12 per cent. of the amount given. The largest total absorption was obtained when a large amount was given in the injection. A table was shown to exhibit the nitrogen-saving properties of fat when the absorption of fat was good. In relation to the absorption of sugar the question of the breaking up of sugars in the intestine under the influence of micro-organisms was discussed and from experimental data it was concluded that the loss of sugar by its decomposition appeared to be less than 1 per cent. In the clinical cases pure dextrose was used and gave very good results; it produced no bowel irritation and alimentary glycosuria never resulted. The absorption was invariably good, equalling in one case 120 grammes in 24 hours, with a caloric value of 494 calories. A table was shown demonstrating the relations between the food calories used and the loss in the patient's weight. The definite relation between the two factors indicated that the observation data might be considered accurate. Dietary standards were next discussed. In the rectal feeding cases the caloric value of the food absorbed varied from 645 calories as a maximum to 240 calories as a minimum, giving an average of 389 calories. Thus from rectal feeding, even if a reduced dietary standard was accepted, only about a quarter of the necessary nourishment could be obtained. Rectal feeding was subnutrition of the most pronounced character and could not be expected to improve the condition of a patient suffering from malnutrition. In considering the cases it had to be remembered that they were all individuals in whom rectal feeding was very well borne and thus probably showed exceptional powers of absorption. Recommendations were next made in regard to some practical points in rectal feeding if good results were to be obtained. As foodstuffs the yolk of eggs and pure dextrose were recommended. It was advised to increase the size of the enema and to give it at longer intervals to minimise the disadvantage obtained from the gastric secretion which followed rectal injections. A large injection given slowly by means of a soft catheter and a filter funnel was well tolerated by most patients. The point of absorption of nourishment injected into the bowel was discussed in the light of Grützner's work and it was urged that a large enema was more likely to pass the ileo-caecal valve than the small amounts generally in use. While from Dr. Boyd's observations it seemed exceptional for substances injected into the bowel to reach the stomach, still in some cases it certainly did occur and was a point to be remembered in the use of rectal alimentation.—Dr. D. N. PATON spoke in highly appreciative terms of Dr. Boyd's extremely difficult investigation. A noteworthy point was the very small absorption of proteid material. He said that a considerable amount of nitrogen was given off by the bowel contents even in the case of starving men and animals and that this came from the intestinal secretions and shed epithelial cells. He thought that perhaps Dr. Boyd had condemned this method of feeding too much and that though 1500 calories were used each day, the addition of 500 by rectal feeding was surely to be desired.—Dr. WILLIAM RUSSELL agreed with Dr. Paton in thinking that Dr. Boyd's view was too pessimistic. Rectal feeding was not intended to replace ordinary alimentation. He thought that nitrogen might be obtained from some other and perhaps more suitable source than egg albumin. The paper, while showing the small amount of albumin utilised, showed the readiness with which dextrose was absorbed and

necessary to myocardial repair. He thought that the striking difference between the results recorded by Dr. Morison and those observed by himself must be due to differences of technique. He was quite prepared to submit his records to any scrutiny which the society might think desirable in confirmation of his statements.—Dr. Leonard Williams said that he agreed with Dr. Morison's opinion that the cases suitable for treatment by baths and waters were comparatively few. He strongly deprecated the fashion which had obtained at one time of hurrying people in a more or less moribund state half across Europe in the expectation of some miraculous "cure" on arriving at their destination.—Dr. William Ewart said that although many cases were unsuitable for the systematic Nauheim treatment as laid down in books, he nevertheless believed in modified applications of its methods to suit the indications. He was therefore less inclined to classify the cases rigidly, as so much must always depend upon their individual features. This was specially true of the cases of aortic valvular disease, between which the kind, the degree, and the duration of the lesion, and the patient's age, constitution, and peculiarities, established vast differences. He believed that carbonic acid played an important part in the balneary treatment.—Dr. Charles Begg (Bath) said that an experience of five years, begun at Nauheim, led him to endorse Dr. Morison's conclusions. Suggestion played a very conspicuous part in the treatment at Nauheim and was a very powerful agent in dealing with such an organ as the heart. The treatment by baths and exercise ought to take its place as, in suitable cases, a useful help, but it was not by any means a specific.—Dr. C. W. Buckley (Buxton) said that in his opinion the issue was confused by the use of the word Nauheim and urged that the treatment of heart disease by physical methods should be considered from a wider standpoint. The result of baths and resisted exercises was to lower the blood pressure and to increase the tone of the arterioles—i.e., to assist the heart's action by promoting the action of what had well been called the "skin heart." The smallest hygienic and other proceedings might tend to this end and in this sense the value of physical treatment was not to be denied in any heart trouble, and, looked at from this standpoint, the apparently irreconcilable views which had been expressed at the meeting might come into harmony if not union.—Dr. Morison, in his reply, said that he regarded baths and exercises as occasionally a useful adjunct to more serious treatment, whereas it appeared to him that what he considered serious treatment was regarded by Dr. Begg Thorne as a useful adjunct at times to the employment of baths and exercises.

LIVERPOOL MEDICAL INSTITUTION.—A pathological meeting of this society was held on Feb. 8th, Mr. Frank T. Paul, the President, being in the chair.—Several interesting specimens were exhibited.—Mr. H. W. Monsarrat showed a Large Periosteal Sarcoma of the Femur.—Mr. D. Douglas-Crawford exhibited an Intussusception of the Colon with a Papilloma at its Apex successfully removed by operation; also a Sarcoma of the Rectus Femoris Muscle and a Thyroglossal Duct Cyst lined by Stratified Epithelium.—Dr. W. Blair Bell and Mr. Clarke showed specimens of Hypernephroma of the Kidney and of an Angiomatous Fibroma of the Uteri.—Mr. W. Thelwall Thomas showed specimens of Excised Gangrenous Intestine, Traumatic Rupture of the Colon, and Two Ovarian Tumours with Twisted Pedicles giving rise to signs of Intestinal Obstruction.—Mr. Thomas also showed (with Mr. H. F. Woolfenden) specimens of Accessory Thyroid, Tuberculous Testis-synovitis, Tubercle of the Mammary Gland, Cystic Kidney, and a growth from the Thumb of doubtful nature.—Dr. R. J. M. Buchanan read a note on the Examination of the Blood by means of Cut Sections, illustrated by microscopical preparations. He considered that this method showed the blood plates better than the film method.—Dr. Nathan Raw read a note on Acute Yellow Atrophy of the Liver and remarked on the fact that in six cases which he had seen there was a definite history of syphilis; specimens from two cases were shown.—Dr. Owen T. Williams read a paper on the Influence of the X Rays on the Nitrogenous Metabolism in Leukæmia, showing as the result of two investigations that sittings of ten minutes per diem produced a marked increase in the excretion of nitrogen and of uric acid. There was also a preliminary rise in the number of leucocytes, a fact noticed in five of the seven cases treated at the Liverpool Royal Infirmary. Synchronous

with these changes there was a constitutional disturbance, anorexia being the prominent feature. In the blood there were signs of di-integration of the leucocytes, the reaction to basic dyes rapidly diminishing. The conclusions drawn were that sufficient time should be allowed between each sitting to allow the body to excrete the noxious products formed and so to prevent the severe constitutional disturbances which followed prolonged administration of the rays.—Dr. H. R. Hunter showed films illustrating the Blood Condition in Leukæmia. This hybrid term, he stated, we owe to Dr. F. Parkes Weber, who introduced it as the English equivalent of the German term "Leukæmie," first employed by von Leube to designate cases of primary hæmopathy (or myelopathy) which present the characters of pernicious anemia and acute myelogenous leukæmia simultaneously. The patient from whom the specimens were obtained was a youth aged 18 years in Sir James Barr's hospital practice. Admitted in August with classical Addison's anemia he died from acute leukæmia in September. In the early stage the red cells numbered 512,000 per cubic millimetre, the colour index being 1.5 and the leucocytes 6600 per cubic millimetre, of which 10 per cent. were myelocytes. At this time there were 14,000 megakaryoblasts per cubic millimetre of the blood. Six weeks later the red cells had fallen to 429,000 and the leucocytes had risen to 220,000, of which nearly 40 per cent. were myelocytes, many of the latter being of the hyaline variety described by Türk as "Reizungsformen." Dr. Hunter thought that this unique case was of importance as demonstrating the evolution of myeloid leukæmia from a blood state indistinguishable from Addison's anemia, but he agreed with Hirschfeld that leukæmia and acute myeloid leukæmia were not separate pathological entities, severe anemia being commonly part of acute leukæmia, whether of the myelogenous or lymphatic forms.

Reviews and Notices of Books.

The Food Factor in Disease: Being an Investigation into the Hereditary Cause, Meaning, Mechanism, and Rational Treatment, Prevention and Cure, of the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, Epilepsy, &c.) Bilious Attacks, Gout, Catarrhal and other Affections, High Blood Pressure, Circulatory, Renal and other Dysfunctions. By FRANCIS HARE, M.D., late Consulting Physician to the Brisbane General Hospital; Visiting Physician at the Diamantina Hospital for Chronic Diseases, Brisbane; and Inspector-General of Hospitals for Queensland, London, New York, and Bombay: Longmans, Green, and Co. Two vols., medium 8vo. (Vol. I, pp. xiv+498; Vol. II, pp. viii+536.) Price 20s. net.

THE purport of this work is to show that excess of carbonaceous material in the blood or, as the author terms it, "hyperpyrexia" (Gr. *πυρεν* = fuel) is an essential, though by no means the sole, factor in many disorders, such as some of the paroxysmal neuroses (migraine, asthma, angina pectoris, and so on), bilious attacks, gout, and some catarrhs. The possibility of hyperpyrexia as a cause of disease was directly suggested to the author by the sudden and complete subsidence of the paroxysms which in two cases of recurrent migraine followed restriction of the carbonaceous intake prescribed for obesity. This led him to investigate the influence of the carbonaceous food-stuffs in health and disease, and the present work is the outcome of several years' study of the subject at the bedside and amongst the records of medical literature.

A priori considerations suggest that the carbonaceous compounds have a greater tendency to accumulate in the blood than the nitrogenous. For while the ingestion of proteid food, whether in small or large quantities, is quickly followed by a corresponding increase in the elimination of nitrogenous excreta such as urea, there is no such rapid and commensurate increase in the elimination of carbonic acid after the ingestion of carbonaceous food; indeed, the capacity possessed by the organism for increasing katabolism

abdomen had behaved similarly. After the first month of treatment the x rays were also applied for an additional ten minutes over the sternum and ends of the long bones. A soft tube was used for the application and no burns had resulted, though the skin had become markedly pigmented. Good results obtained in this way were often evanescent, therefore it was proposed to continue the rays once a week for the present. Microscopical specimens of the blood were also shown.—Mr. A. R. Anderson showed a man, aged 48 years, the subject of Chronic Pancreatitis successfully treated by cholecystotomy. He had been ill for a year with dull aching pain between the umbilicus and the right costal margin. There was tenderness along the outer border of the right rectus muscle but no lump could be felt. The pain had never been as severe as typical biliary colic; it was worse at night and was unaffected by food. Marked jaundice lasting for two months had occurred some time previously to admission and vomiting had been a daily occurrence for the last two months. There were no hæmorrhages and no fever. The diagnosis rested between gall-stone, duodenal ulcer, and pancreatitis, or a combination of any two or of all three of these conditions. At the operation the biliary passages and the duodenum were found practically normal but the pancreas was enlarged, hard, and nodular, especially towards its head. The gall-bladder was stitched to the abdominal wound and was drained with a tube for six weeks. All the symptoms had been relieved and the man had put on weight considerably; the sinus still discharged a trifling amount daily.—Dr. O. H. Cattle read a paper on Bronchitis and Broncho Pneumonia in which he examined the contributory causes of these ailments, classifying them as (1) cold and changeable winds; (2) micro-organisms; (3) faulty nasal respiration causing mouth-breathing; (4) dusty occupations and impure air; and (5) vascular congestions, whether associated with alcohol, (6) mitral stenosis, or (7) the high tension of renal cases. Treatment was beside the mark unless any predisposing cause, such as goit, was noted and corrected. Collapsed lung and lobular pneumonia were in infants frequent complications of bronchitis, which was predisposed to, and made more dangerous by, rickets. Old people showed a similar proneness to lobular pneumonia. Measles, whooping-cough, and enteric fever were constantly accompanied by bronchitis, and broncho-pneumonia also occurred in these diseases and but rarely in scarlet fever. The dividing lines between lobular and lobar pneumonia were not always well defined. In frequently relapsing cases of broncho-pneumonia suspicion should arise of tuberculosis. After the age of four years bronchitis seldom ran on into lobular pneumonia. Various pathogenic and pyogenic organisms occurred in normal air passages and in cases of illness were detected in the sputum or lesions—such organisms as staphylococcus, streptococcus, and pneumococcus (Fraenkel). The secondary form of broncho-pneumonia was more fatal than the primary type. The latter usually attacked robust children. Cerebral symptoms were often well marked in children, especially those who had been ailing some time. The pulse-respiration ratio was highly important in regard to diagnosis. The more important sequelæ dealt with were bronchiectasis and emphysema. These were liable to lead to dilatation of the right heart with tricuspid regurgitation, while the sputum ultimately became purulent. "Putrid bronchitis" comprised: (1) mild and chronic cases; and (2) severe and rapidly fatal ones. The juvenile form of bronchiectasis was one result of broncho-pneumonia. Other cases of foetid sputum, accompanied by signs of cavity, were probably the result of pneumonia which had gone on to gangrene. A frequent and difficult problem was to decide whether bronchitis was merely masking some other more important disease. For instance, bronchitic signs might lead to a pneumonic patch being ignored. The occurrence of bronchitis with copious frothy sputum in the course of pneumonia made the prognosis much more grave. Acute tuberculosis was liable to be diagnosed as acute bronchitis, but with care the mistake might be avoided. Hæmoptysis was not necessarily tuberculous in origin and might occur also in bronchiectasis or simple bronchitis. Dealing with treatment, the respective value of emetics, venesection, and belladonna was pointed out, while opium had to be used with judgment or altogether avoided. Menthol lozenges were extremely useful for diminishing reflex cough and continental authorities attached great value to cold applications.—Mr. Geraty alluded to dusty trades and Dr. Ransom thought bronchitis apart from influenza, measles, pneumonia and enteric fever was distinctly rare, especially the

acute form. Many people whose cough was called "bronchitis" were really suffering from granular pharyngitis, while a considerable number proved sooner or later to be tuberculous. He thought the baneful influence of the east wind had been over-rated and considered the steam-kettle treatment ought to be allowed to become obsolete. The patient's comfort ought to be the main consideration and he noticed a tendency in the disease to run a definite course, like a common cold, regardless of drugs or hot or cold air.—Dr. F. H. Jacob insisted on the importance of systematic examination of the sputum in every case. Even if tubercle bacilli were not discovered lung tissues might be and cases suggestive of pulmonary tuberculosis in which tubercle bacilli were not found often proved to be cases of new growth.—Dr. M. Parry Jones (Derby) noticed that there was less bronchitis amongst patients living on a sanatorium balcony than anywhere else. He thought bronchitic patients were subject to bronchitis when the wind was north-east, but nobody else was. Cases of laryngeal or pharyngeal irritation were often called bronchitis and he instanced a case of this sort where a post-mortem examination revealed an aortic aneurysm. He had seen very good results with belladonna in children and now knew that collapsed lung was much commoner than he at one time supposed. He had found the creosote chamber give good results in foetid bronchitis and it was by no means so disagreeable to the patient as was sometimes stated.—Dr. R. Alderson, Dr. W. Hunter, and Dr. W. C. O. Kirkwood continued the discussion.—Dr. Cattle, in reply, thought that when the bronchial tubes were congested there was an advantage in breathing a moist atmosphere warmed to about 60° F., provided it was not super-saturated. As a matter of general experience tuberculous cases exhibiting moist catarrh did not do so well in this climate, especially near the east coast.—Dr. Ransom read a paper on the Diagnosis of Cerebellar Tumours, with specimens and notes of a case.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Mr. Ernest Solty (Harrogate) being in the chair.—Dr. Alexander Morison read a paper on the Present Position of the Treatment of Heart Disease by Baths and Exercises. He said that the cases of heart disease which the majority of English physicians now, and very rightly in his opinion, considered suitable for treatment by baths, exercises, and climatic conditions were, speaking generally, such as could safely travel for a more or less considerable distance and were cases which could in no sense be regarded as seriously ill at the moment, whatever fears might be entertained for their future. These patients, he considered, could be classed in three divisions as follows. 1. Those who had not passed the meridian of life and had a weakness of the myocardium, moderate in degree, with or without irregularity of action, and without organic valvular lesion or organic disease of other organs, and who were quite free from essential renal disease. 2. Those who exhibited a similar degree of disordered action of the myocardium associated with organic valvular disease, other than aortic reflux and the various organic diseases of the right side of the heart, with the exception of milder forms of cardiac malformation, and who were free from extra-cardial adhesion so far as could be determined (for this was usually difficult). 3. Older patients with myocardial debility, without arterio-sclerosis, without organic valvular disease, without disease of organs other than the heart, and without symptoms of angina vera, to use than the heart, and without symptoms of angina vera, to use a convenient but not strictly accurate term.—Dr. E. Symes Thompson said that whilst he continued to use baths in some cardiac cases he attached more importance to the exercises than to baths.—Dr. W. Bezy Thorne said that he was unable to perceive from any evidence disclosed by the paper to which he had listened that the opinions therein expressed were based either on facts or on definitely recorded observations. His own experience of some 8000 recorded cases had led him to conclusions with regard to several points which had been raised diametrically opposed to those expressed. For example, there were no cases in which the results of treatment were more strikingly satisfactory than in septuagenarian atheroma, in the graver forms of angina pectoris, and in aortic reflux. The only limit he knew to the benefit of treatment in the last two classes of cases was where there were clinical grounds for coming to the conclusion that the coronary vessels had permanently lost the qu

results can often be obtained in recurrent headache, sick or other, in asthma, and angina pectoris vasomotoria, amongst other disorders. "The effect of the dietetic change in the ordinary varieties of recurrent headache, not amounting to formal migraine, points to the conclusion that the great majority of these affections are hyperpyreptic and dispensable with great facility by a moderate carbonaceous restriction, perhaps combined with some increase of physical exercise. Each word in the above sentence has been carefully weighed." In some cases a very small increase in the carbonaceous intake may suffice to re-induce an attack, for example, in a case of classical migraine, two or three lumps of sugar, half an ounce of butter, an extra ounce of bread, were always followed within a few days by a paroxysm, even after months of complete freedom.

In practice the author relies mainly on the regulation of diet, exercise, and sleep, on judicious exposure to cold, and on the provision of an abundance of fresh air. As regards the quantity of food he is unable to formulate exact rules. He endeavours by careful experiment in each individual case to determine the minimum carbonaceous intake compatible with carbon equilibrium. If on such a diet the disorder continues, then it is practically certain that some factor other than a hæmic one is exerting a dominant influence and determining what the author describes as "pathological prepotency" (Chapter XIII.). This condition is of great importance, not only theoretically but practically, because it removes many cases from the list of those which can be successfully treated by means which operate only on the composition of the blood.

Doubtless Dr. Hare's thesis will find many opponents. We have been so accustomed to regard an excess of nitrogenous material in the blood as the chief thing to be avoided in prescribing a dietary that it comes somewhat in the nature of a shock to be told that more harm is likely to accrue from an accumulation in the blood of carbonaceous material. But whatever the ultimate fate of his thesis the important fact remains that good may often be achieved by giving it practical effect—by curtailing, that is to say, the carbonaceous intake and enjoining a mode of life adapted to promote carbonaceous katabolism. In this way a long array of troubles can be greatly relieved if not actually cured. The generalisation is a wide one, embracing many subordinate theories; and it is not to be expected that all of these will survive unmodified. But even if the main thesis—namely, the existence of the blood-state or blood-states referred to as hyperpyrexia—which, we observe, has already been accepted by no less an authority than Professor Chittenden—should fail to stand the test of time the author has done no small service. He has brought home to the profession the fact that many disorders, such as migraine and asthma, which some would have us believe are due to an excess of purin bodies in the blood and should therefore be treated by a purin-free dietary, can be even more effectively treated by a dietary in which bird, meat, and fish are liberally represented but which contains carbohydrates and fats only in small proportion.

We welcome Dr. Hare's book. Since the time of John Hunter medical observations have been accumulating in geometrical ratio and have already attained to dimensions which are well-nigh unmanageable. Therefore every serious attempt to correlate a portion of this vast accumulation of isolated—and we are almost tempted to add wearisome—facts, and to deduce therefrom general principles enabling us to group in their true relationships numbers of apparently disconnected phenomena, is worthy of all encouragement. Dr. Hare proceeds largely by deduction, a method of investigation all too neglected by the medical profession. Nevertheless, he does not shirk the application to facts. The work contains upwards of 1800 references to the observations of nearly 600 authorities—observations which the

author attests with great skill and apparent fairness in support of his argument. The quotations are given with evident care and accuracy. The style is lucid and the printing is excellent.

A System of Physiologic Therapeutics, a Practical Exposition of the Methods, other than Drug-Giving, Useful for the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Clinical Medicine in Jefferson Medical College; Physician to the Jefferson Medical College Hospital and to the Philadelphia General, Jewish, and Rush Hospitals. Volume XI. Illustrated. London: Reisman, Limited. 1905. Pp. 388. Price 12s. 6d.

THE present volume of this well-known series contains articles on a variety of subjects. The first is on Serum Therapy by Dr. Joseph McFarland, professor of pathology and bacteriology in the Medico-Chirurgical College of Philadelphia. He commences by making some interesting remarks on the evolution of serum therapy and gives a short résumé of the history of the subject from the time (1890) when the two Japanese observers, Ogata and Jasshara, found that animals subcutaneously injected with blood drawn from animals immunised against anthrax likewise became immune. He then proceeds to consider the modern theories of immunity which form the scientific basis of serum therapy. The lateral chain hypothesis of immunity introduced by Ehrlich is fully explained. Owing to the recognition of the various reactions associated with immunity many new terms have become necessary; these are duly defined in this article. Dr. McFarland next gives excellent descriptions of the special serums already in use, presenting an account of their preparation, standardisation, methods of administration and the effects produced by their injection.

The second communication is by Dr. Oliver T. Osborne, professor of materia medica and therapeutics at Yale University, and is entitled "Organotherapy," which he defines as the treatment of disease by means of preparations made from the internal organs of animal bodies. He describes the therapeutic value of preparations made from the thyroid, thymus, pituitary, and suprarenal glands respectively. He also gives a short account of "animal extracts and similar agents of minor importance." Amongst these he includes the following: preparations derived from the pancreas, spleen, testicles, ovaries, mammary glands, parotids, and prostate; and finally, he notes the trials which have been made to make medicinal use of nuclein, brewers' yeast, lecithin, red bone marrow, and glycerophosphates. Dr. Osborne, whilst fully discussing his subject, makes no recommendation that has not been substantiated by the test of time.

Dr. S. G. Tracy, "radiologist," New York Skin and Cancer Hospital, writes on the Medicinal Aspects of Radium, Thorium, and Radio-activity. From his experience with radium he is convinced that its radiations have a positive effect on diseased tissues. He is of opinion that even at this early stage of "experimentation" it seems certain that their "tentative use" is indicated in lupus and other forms of tuberculosis, in rodent ulcer, superficial cancer and some cases of deep cancer, in chronic skin diseases, in atrophy of the optic nerve and blindness from some other causes; also in certain nerve affections, as neuralgia, facial paralysis, and spasmodic tic. Further experience by other observers will be necessary before Dr. Tracy's somewhat optimistic views can be substantiated.

Another contribution to this volume is that entitled "Counter-irritation; External Applications; Blood-letting," by Dr. Frederick A. Packard, late physician to the Pennsylvania Hospital. The various methods of applying counter-irritation are described but Dr. Packard is obliged to admit that although this form of treatment has been used for generations very little is known of the exact mechanism by which

in response (to the absorption of an excess of carbonaceous food is strictly limited. And it is a remarkable fact, and one very liable to be lost sight of, that for adequate carbonaceous katabolism the organism is largely dependent on muscular exercise and exposure to cold—conditions which influence but slightly nitrogenous katabolism. Hence it follows that a liberal supply of carbonaceous food combined with deficient exercise, especially in warm weather, favours an accumulation of the carbon contents of the blood. Such an accumulation would, of course, be precluded by an adequate increase in the rate of fat formation, but the capacity for fat formation is conspicuously deficient in many persons and may, moreover, have already attained its limit. In these days of warm clothing, warm rooms, and little exercise, when starch and sugar are consumed in such truly enormous quantities, the conditions are, it is contended, all favourable for the induction of the hyperpyræmic state.

The means possessed by the organism for regulating the carbon contents of the blood are discussed at length. The author maintains that an excessive ingestion of starch or sugar may lead to "glycogenic distension" of the liver which, by compressing the intra-hepatic portal capillaries, causes mechanical congestion of the whole retro-hepatic portal venous system and consequently of the whole gastric and intestinal mucosa. Hence digestion and absorption are inhibited and "biliousness" of many clinical varieties may arise. In this way the liver tends to restrict the whole nutrient income, and therefore the carbonaceous income of the blood. On the other hand, undue accumulation of the carbon contents of the blood may be prevented by an increase in the carbonaceous expenditure of the blood, the main items of which are fat formation, combustion or carbonaceous katabolism, and in women utero-gestation, lactation, and menstruation. These strictly physiological functions are commonly adequate to the task of disposing of the carbonaceous income of the blood. But they may prove inadequate. Then the organism may resort to various pathological means. For example, hyperpyræmia may culminate in an attack of one of the paroxysmal neuroses, such as asthma or migraine. Such paroxysms tend to relieve the hyperpyræmia upon which they depend, the former by greatly increasing combustion or katabolic expenditure, and the latter by temporarily stopping the carbonaceous income through anorexia, and so on. Again, hyperpyræmia may, under different conditions, culminate in acute gout or some acute catarrhal affection. Such attacks, being pyrexial, involve increased combustion whereby is dispersed the hyperpyræmia upon which they depend. All these processes the author refers to as ultra-physiological or pathological functions; they are "salutary in intent" though sometimes they may prove deleterious, even disastrous, in result.

The author seeks to establish his theory of hyperpyræmia by an appeal to clinical facts. He claims to show that all those conditions which favour hyperpyræmia tend to initiate, to precipitate, or to accentuate the disorders ascribed to this blood state; and conversely. The conditions most favouring hyperpyræmia are a large carbonaceous income resulting from a heavy mixed diet and a small carbonaceous expenditure resulting from sluggish combustion. Hence, asthma and migraine are peculiarly prone to commence during the sleep which follows a heavy meal, while both disorders are markedly bettered by the opposite conditions. Warm weather, sleep, and lack of exercise, all of which reduce the rate of combustion, tend to promote the disorders in question, as they do all other hyperpyræmic manifestations. The influence of sleep is of special interest. Asthma, for instance, occurs most frequently between 2 and 3 A.M. when ordinarily combustion is least active; but when, as in the case of journalists, hospital nurses, and policemen, the asthmatic goes on night duty the paroxysms occur during

the late afternoon towards the end of the daily sleep. Again, headachey individuals are prone to wake with a headache which is dispersed by the increased combustion caused by rising, washing, and dressing. The hyperpyræmic disorders are further especially liable to occur just before each menstrual period and at the climacteric, at which times, it is argued, there is a special tendency for carbon to accumulate in the blood.

The conditions most hostile to hyperpyræmia are exposure to cold, muscular exercise, utero-gestation, lactation, an ample fat-forming capacity, pyrexia, and glycosuria; and all of these tend to alleviate the hyperpyræmic disorders. Numerous illustrative cases are given; perhaps the most interesting, certainly the most striking, are those showing the influence of the last two. Pyrexia is a most effective "acarbonising" process, not only restricting income but greatly increasing expenditure, and it is certainly a remarkable fact that practically all the disturbances attributed by the author to hyperpyræmia remain in complete abeyance or become markedly modified during the continuance of pyrexia. So decided is this influence that, in the author's opinion, it may often be used as a means of clinching the diagnosis, for or against, in cases of suspected incipient pulmonary tuberculosis. The abrupt cessation about the supposed time of infection, of disorders such as migraine and asthma, or other hyperpyræmic affections such as acne, should strengthen the suspicion of tubercle; whilst their continuance unchanged should constitute strong evidence against such a diagnosis. Again, the pyrexia of acute gout, lasting as it may do many days, is claimed to be curative of the underlying hyperpyræmic condition and of all those hyperpyræmic manifestations (irregular or suppressed gout) which so often precede the articular paroxysm. During the febrile stage of typhoid fever, of which disease he has treated upwards of 2000 cases, the author has never met with an attack of migraine. The efficacy of the seton in migraine he attributes to the mild septic fever which it induces. On these grounds he pleads for a wider employment of this time-honoured measure which he has seen used with advantage in "atypical headaches of many kinds, in hay fever, asthma, epilepsy, and mental aberration." The troubles which sometimes succeed the healing of old-standing sinuses, fistulas, and ulcers he attributes to the cessation of the attendant septic pyrexia or of the purulent discharge, each of which assists in decarbonising the blood. Some striking instances are cited of the beneficial influence of pyrexia on insanity.

Glycosuria may act with equal potency. Not only are migraine, asthma, and insanity profoundly modified by its onset, but also all those disturbances which the author ascribes approximately to glycogenic distension of the liver: for example, certain forms of indigestion, bilious attacks and biliousness generally, and even hemorrhoids, a point of no small interest.

Adverse critics will naturally ask how the author's theory can be reconciled with the fact that the hyperpyræmic disorders are relieved by glycosuria, a condition in which the sugar contents of the blood are, often at least, super-normal (hyperglycæmia). And Dr. Hare frankly admits "that the conception of hyperglycæmic glycosuria as an acarbonising process presents great difficulties—difficulties which are increased by the fact that in some cases there is also an excess of fat in the blood. Such difficulties are, of course, irremovable so long as we remain ignorant of the chemistry of hyperpyræmia. All it is possible now to affirm is that hyperglycæmia and hyperpyræmia are for the most part antagonistic in their clinical relationships." (Vol. I., p. 196.)

Comparing the two plans of dietetic treatment—that by reduction of proteid and that by reduction of carbonaceous food—the author pronounces in favour of the latter, at any rate in most cases. By it, he claims, almost immediate

Part I.—the Evidences of Disease—deals with symptoms and their indications. A great amount of very useful information has been brought together in a very convenient form for reference and it does great credit to the judgment and experience of the author, as well as to his literary abilities, for it might in other hands have easily been a tedious enumeration of symptoms and their associations or monotonous tables of diseased conditions in which they occurred. This part of the work is divided into 45 sections and comprises a very useful and well illustrated statement of the medical anatomy of the various organs; a detailed description of what are usually called clinical methods; and a critical and careful consideration of the signs and symptoms found in association with the various organs of the body, together with their diagnostic significance and their value in differentiating diseases from one another. In his accounts of the technique of clinical methods Dr. Butler is always practical, concise, and clear. His description and discussion of the symptoms and physical signs of diseases of the respiratory and circulatory systems are worthy of special commendation, for they are most carefully and accurately considered and the sources of fallacy are pointed out. The description of percussion of the heart might with advantage be studied by many practitioners and students of medicine, since it inculcates exactness of observation. Dr. Butler speaks highly of Dr. A. E. Sanson's pleximeter for this purpose. He is also of opinion that auscultatory percussion is a method worthy of more extended use in the mapping out of organs than it has at present achieved. The instrumental methods of investigation of the circulatory organs are also carefully described, especially the use of the sphygmomanometer and the sphygmograph. The description of the former, which is an instrument of considerable value, is one of the most succinct and critical we have seen. Dr. Butler regards the instrument of Janeway as the most satisfactory, although that of Stanton is useful and accurate.

In regard to the nomenclature of the pulmonary adventitious sounds we are not quite in accord with Dr. Butler who defines rales as adventitious sounds produced either in the bronchial tubes or alveoli, and divides them into dry and moist and consequently refers to sonorous and sibilant rales instead of rhonchi. We are of opinion that it is better to restrict the term rale to sounds of moist character and to subdivide them into bubbling and crackling, sounds of dry character being referred to as rhonchi.

In the review of the previous edition we referred to the interesting section on the examination of the nervous system and to the useful diagrams and illustrations. It is somewhat extended in the present volume and retains its excellent features. The sections on the examination of the blood, the stomach contents, the urine, and the sputum are all detailed and practical in character, but that on the investigation of the feces is less exhaustive. The section on the blood contains descriptions of trypanosoma, piroplasma, and the Leishman Donovan bodies. The investigation of fluids obtained by paracentesis or puncture is also described. A short section on cryoscopy, or the observation of the depression of the freezing point of the various fluids such as blood and urine in pathological conditions, has been added. The method of using the cryoscope is described and a brief summary is given of some of the results which have been obtained by it. Part I concludes with a description by Dr. P. M. Pilcher of the uses of the Roentgen rays in medical diagnosis and contains a useful account of the principal appearances observed and the conclusions to be drawn from them.

Part II.—Diagnosis, Direct and Differential—treats of diseases and their characteristics. Here the various diseases are separately considered, a brief summary of their chief symptoms and signs is given, and the differentiation from other diseases simulating them is then worked out. It

therefore deals largely with the collation and arrangement of the information given in the first part of the work. This double system of reference constitutes the most original feature of the book and no doubt contributes to its success in no small measure. We are still of opinion, as suggested in our previous review, that the section on constitutional diseases might be improved and that a more detailed consideration of the diagnosis of chronic rheumatism, gout, and diabetes would increase its value. A few statements made in the book might be altered or modified—among them that tetanus neonatorum is a congenital disease, when it is surely acquired immediately after birth. Again, "phthisis-noid" for phthisinoid is new to us and the use of the word "rheumatic" to indicate the result of exposure to cold is misleading and should not be encouraged. When referring to toxicæmic jaundice as 'non ob-structive' it would be as well to indicate that it is essentially hepatogenous and ob-structive in character and not hematogenous, as the description given seems to suggest. The book as a whole is, however, singularly free from error, and we have found it a valuable work of reference and can confidently recommend it to practitioners for that purpose and to students as the most practical and scientific handbook of the principles of diagnosis that we have seen. The illustrations in this edition, as in the last, are copious and of a very high order, and they contribute largely to the interest and the value of the work; some of the anatomical diagrams and drawings are of especial interest and serve to illustrate and to elucidate clinical phenomena very clearly.

Walsham's Handbook of Surgical Pathology. For the Use of Students in Pathology of Museums. Third edition. Revised and largely rewritten by HERBERT J. PATERSON, M.A., M.B., B.C. Cantab., F.R.C.S. Eng., Assistant Surgeon to the London Temperance Hospital; Surgeon to Out-patients at the London Lock Hospital. London: Baillière Tindall, and Cox. 1904. Pp. 529. Price 10s. 6d. net.

TWENTY SEVEN years have passed since the first edition of this book was issued. Then it was the only example of a text-book of surgical pathology illustrated by the actual specimens in a museum, but the example has since been followed by others. It is only in the post-mortem room and in the museum that a student can learn naked eye pathology; the descriptions in text-books without a personal acquaintance with the objects described avail nothing. Morbid anatomy should therefore be read in the museum, exactly as surgery must be learnt, not by merely reading a work on the subject but by examining patients in the ward or in the out-patient department. A work on surgical pathology should be arranged on the same plan as the museum in which it is read, so that as the student reads the description of a morbid condition he may see an example of it before him. This work is based on the arrangement in use at the museum of St. Bartholomew's Hospital and the specimens illustrating each description are referred to by number and are shortly described. Therefore the book is especially useful, as it has been for many years, to students at that hospital, but it can be used with nearly as much benefit by those having access to any good collection of surgical specimens. The revision needed for the present issue of the book has been well and thoroughly carried out by Mr. Paterson and it should give a new lease of life to a work which has proved of immense benefit to many generations of students.

LIBRARY TABLE

Photographic Atlas of the Diseases of the Skin. In four volumes. A series of 96 plates, comprising nearly 200 illustrations with descriptive text, and a treatise on Cutaneous Therapeutics. By GEORGE HENRY FOX, A.M.,

it accomplishes its object. In considering venesection the sensible conclusion is arrived at that the folly of the old practice of copious periodic bleedings in health and upon the occurrence of almost any evidence of disease is no argument against judicious bleeding when true indications for it exist.

The concluding article of this volume is by the editor (Dr. S. S. Cohen) entitled, "An Outline of the Principles of Therapeutics, with especial reference to Physiologic Therapeutics." The great extent of this class of therapeutics is indicated, and with some general remarks on a subject which has filled 11 volumes Dr. Cohen brings to a conclusion a work that has occupied his thoughts for 20 years and has claimed his attention almost constantly for the last five years. He may be congratulated on having brought before the medical world a most complete system on therapeutical measures apart from the use of drugs and the publication will doubtless prove of the greatest value to all practitioners. The last 110 pages of this volume are occupied by an "Index digest of Therapeutic Measures" which will not only in itself afford much valuable information but will greatly aid as a means of reference to the subject-matter contained in previous volumes.

A Text-book of Obstetrics. By ADAM H. WRIGHT, Professor of Obstetrics in the University of Toronto; Obstetrician and Gynaecologist to the General Hospital, Toronto. With 224 illustrations in the text. London and New York: D. Appleton and Co. 1905. Pp. 591. Price 18s. net.

THIS work is of interest, as it illustrates the teaching given in the University of Toronto, in which the author is professor of obstetrics. It is written chiefly from the clinical point of view and the text is plentifully illustrated by typical cases from Professor Wright's note-books. While the book contains much practical information which cannot fail to be of service to the student, yet, in our opinion, the style errs in being too popular and not sufficiently scientific. There are a number of minor errors and a good many hasty and not very accurate deductions. Numerous quotations are given from the writings of the Dublin and Edinburgh schools of obstetricians, but the London school, on the other hand, does not seem to find favour in Professor Wright's eyes and several times is spoken of in rather slighting terms. We are all prepared to admit the excellent work in obstetrics which has been done in Dublin and in Edinburgh but before judging the work done in London unfavourably, as Professor Wright seems inclined to do, he should be quite sure that he is really representing the latest views of the chief London teachers. This does not appear always to be the case—for example, the views attributed to Dr. A. L. Galabin on p. 338 with regard to the treatment of accidental hæmorrhage are not those which he holds at the present time and evidently are not taken from the latest edition of his text-book of Midwifery. We are further told that many, if not the majority of, British obstetricians do not consider manual rotation of an unengaged occipito-posterior presentation either a scientific or indeed a practical method. This is certainly not our view of the teaching current in this country at the present time as to the treatment of this complication of labour. It is a pity that in these circumstances the author should so frequently allude to facts or methods of treatment as originating in certain schools—for instance, he attributes the method of abdominal examination described to the Dublin school which can lay no claim to having originated it.

Professor Wright is apparently not inclined to adopt the modern teaching as to the mechanism of labour; he prefers the old terms and explanations and is not satisfied that frozen sections have given any real proof to the contrary. We are glad to see that he does not recommend massage of the breasts. On p. 175 is the statement that "the

mortality amongst children in breech deliveries conducted by midwives in Great Britain is simply appalling. A country, however, which by Act of Parliament converts the ordinary midwife into a legalised obstetrician must inevitably suffer seriously from such extraordinary legislation." Such a statement as this shows that the writer is quite ignorant of the object and aim of the Midwives Act and does not increase our belief in the general accuracy of his book. The illustrations on the whole are good and well chosen but the one on p. 44 is quite inaccurate. The book will no doubt prove of service to the students for whom it is written but it presents no features which render it necessary for us to recommend it to English students.

The Modern Mastoid Operation. By FREDERICK WHITING, A.M., M.D., Professor of Otology, Cornell University Medical College; Aural Surgeon to New York Eye and Ear Infirmary, Surgeon to St. Bartholomew's Clinic, &c. Illustrated by 25 half-tone and 23 key plates made from original drawings. London: Rebman, Limited. 1905. Pp. 353. Price 27s. 6d. net.

THE author of this book is unnecessarily modest in his estimation of his work. He has written a quarto volume of 353 pages and yet he calls it a little book. We cannot but wonder how much larger it would have to be in order to deserve to be called a large book. Within recent years the treatment of inflammation and suppurative disease of the middle ear and its accessory cavities has undergone very great development and the modern mastoid operation aims at nothing less than the laying open all air spaces communicating with the middle ear. There are two chief methods by which this can be done—namely, the use of the burr and of the chisel, gouge, and rongeur. The author chiefly favours the employment of the gouge and he describes the operation with a fulness and an attention to detail which leave nothing to be desired. Every step is illustrated by a photograph and to each photograph is an explanatory plate, with lettering; as each reproduction of these photographs occupies a separate page there is ample room for an enlarged representation of the structures. We are even favoured with an illustration of a patient with his head bandaged after the operation. A very good account is given of the history of the treatment of suppuration of the middle ear from the time of Hippocrates. A useful list and description of the instruments required conclude the volume; some of these are figured. It might have been well to have had diagrams of some of the other instruments. The book is admirably printed. This work will be of interest chiefly to surgeons but all who have to do with patients with middle-ear disease should derive profit from its pages.

The Diagnostics of Internal Medicine: a Clinical Treatise upon the Recognised Principles of Medical Diagnosis. By GLENTWORTH REEVE BUTLER, Sc.D., M.D. With five coloured plates and 288 illustrations and charts in the text. Second revised edition. London: Sidney Appleton. 1905. Pp. xxiv. + 1168. Price 25s. net.

IN our review of the first edition of this work we commented on the originality and the success of the author in his treatment of a difficult subject and expressed the opinion that it was undoubtedly the best book of its kind. We learn from the preface to this present edition that it has been very favourably received by the profession at large, and that after a number of reprintings it was decided to revise and to bring it up to date and to add the necessary material required by the advances made in diagnostic methods since the first edition was prepared. At the outset we may premise that we have practically nothing but praise for this edition as for its predecessor. The general plan of the work has not been altered and the division into two main parts is still retained.

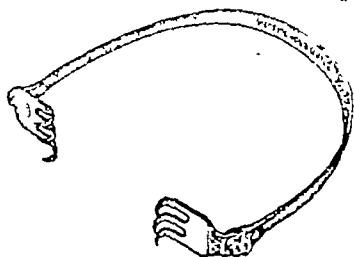
the previous section. In one a novel effect is introduced by presenting a view of the rectum and surrounding peritoneum through the semi-transparent sacrum and coccyx. This view is intended to show the area which is available for surgical operations on the rectum by the sacral route. The majority of the photographs depict the anatomy of the lower extremity. They comprise views of the superficial and deep dissections of the gluteal region, thigh, popliteal space, leg, and foot; illustrations of the hip, knee, ankle, and tarsal joints; and some excellent representations of the surface anatomy of the limb. The views of the deep dissections are more striking than those of the superficial structures and really convey an excellent idea of the relations. The five pictures of the surface markings bring out the muscular and tendinous projections in strong relief and are decidedly useful. In many of the views we still notice a decided tendency to exaggeration of the perspective. On the whole, the section is quite equal in excellence to those which have preceded it.

Lunacy Practice: a Practical Guide for the Certification and Detention of Persons of Unsound Mind. By WILLIAM H. GATTIE, F.C.I.S. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. Pp. 53. Price 2s. 6d.—In these pages the author, who occupies the position of secretary to two metropolitan licensed houses for the insane, sets forth the necessary formalities to be observed in the reception of patients into institutions for the insane and into private care. The case of private patients receives particular attention, and the examples of the judicial order, medical certificates, and accompanying papers in such cases are likely to be useful to the inexperienced. The corresponding information in respect to pauper patients might with advantage be fuller. In the chapter on Absence of Patients on Leave it would, we believe, be better in a future edition to separate explicitly the case of private from that of pauper patients, and to give the procedure in the latter case more fully. It is stated that "the medical superintendent of an institution in which a person of unsound mind is detained has the power to discharge the patient if he thinks it desirable and he also has the power to cause further detention of a person of unsound mind when from the nature of the case it may be deemed necessary." This statement is not strictly accurate, as will be apparent on reference to Sections 74 and 77 of the Lunacy Act. Useful illustrations are given of the various reports which have to be made in respect to detention, death, escape, and so on, of persons of unsound mind. The information respecting private patients for the use of justices is also serviceable. There are many to whom a practical guide of this kind is likely to be acceptable.

New Inventions.

AUTOMATIC WOUND RETRACTOR.

I HAVE recently designed an automatic wound retractor, of which the accompanying illustration is a representation



(half size). The instrument consists of a U-shaped steel spring with clubbed extremities. Curved sharp points are fitted into slots in the clubbed extremities, to which they are

joined by a screw pin. By unscrewing the pin the points can be removed when the instrument is to be sterilised; other points can also be adjusted and, if desired, blunt hooks can be substituted. To introduce the instrument it is held with the spring vertical to the surface of the body. The ends of the spring are approximated by the pressure of the finger and thumb and the hooks are placed under the edges of the wound. On relaxing the fingers the spring opens, retracting the wound edges, and it is then turned down so as to lie flat on the surface of the skin and out of the way of the operator. To remove, the limbs of the spring must be approximated and the hooks are then easily disengaged from the relaxed edges of the wound. I have found the instrument of use in the radical operation for inguinal hernia, dissection of glands in the neck, mastoid operation, and others. It has been made to my directions by Messrs. Baird Brothers, Bath-street, Glasgow.

Glasgow.

G. H. EDINGTON.

Looking Back.

FROM

THE LANCET, SATURDAY, Feb. 16th, 1825.

Mothers should purchase the book¹; for there is no woman who deserves the endearing appellation of mother, who will not be interested and instructed by its perusal. The authoress has, moreover, introduced a number of devotional remarks, which reflect great credit upon her piety, but which add rather to the bulk and price, than to the practical value of the volume. Frequent appeals to the Deity, and constant assumptions of the special agency and interposition of Providence, in the ordinary transactions of human life, are never very judicious, and are altogether misplaced in a work of this kind. Philosophically speaking, the fall of a leaf, and of an empire, may, for aught we know of the matter, be events of equal importance, or insignificance, to the great Author of nature; and the application of a blister or a galbanum plaster to the skin of a humble individual, may be as appropriate an occasion for invoking God's blessing, as the anointing of a royal cranium with archiepiscopal oil. But the vulgar are not philosophers; their measure of meanness or magnificence is regulated by the imperfect standard of human associations; and we cannot help reminding the fair authoress, that the cause of piety, which we doubt not she is sincerely desirous of promoting, is rather weakened than advanced, by the habit of associating the name of the Deity with mean and familiar objects, and of invoking his aid and co-operation on light and trivial occasions.

There is a great deal of excellent information to be found in this volume, respecting the duties of wives on becoming mothers, and the care and management of infants and young children, of which no extracts for which we could afford space, would convey an adequate idea.

We had almost forgotten to mention, that the "Good Nurse" is enlivened with a copy of verses, addressed to the authoress, evidently from the pen of that tuneful medical Melibœus, Roderick Macleod, physician and poetaster to the firm of Messrs. Longman and Co. Here they are:—

"The leaves are quite withered
Bestrewed on the ground;
Nature's charms are all vanished by stealth;
A wreath of green bays
Famed Hygeia has found,
To crown her in honour of health."

By the way, we regret to observe, that a single application of THE LANCET to Roderick Macleod's poetry seems to have silenced his Doric reed for ever.

To the Readers of THE LANCET.

MACLEOD v. WARLEY.

The "Yellow Goth" will be scarified by Mr. BROUGHAM on Monday next, the 18th inst., in the Court of King's Bench, Westminster.

¹ Conclusion of review of "The Good Nurse, or Hints on the Management of the Sick and Lying-in Chamber and the Nursery." Second edit. Longman and Co. 1823. 12mo. 387.

M.D., Professor of Dermatology, College of Physicians and Surgeons, New York; Consulting Dermatologist to the Department of Health, New York City; Physician to the New York Skin and Cancer Hospital, &c. London and Philadelphia: J. B. Lippincott Company. Vol. III. Pp. 36. Plates XL. to LXXII. Price 10s. 6d.—Only a few weeks have elapsed since we spoke very favourably of the second volume of this Atlas and all the praise that we gave to the two previous volumes is equally applicable to this. The text extends alphabetically from Leprosy to Psoriasis. The plates, of which there are 32 in this volume, are excellent. The nomenclature, always a great difficulty in dermatology, is not quite consonant with modern English usage.

Surface Anatomy. By RICHARD J. A. BERRY, M.D. Edin., F.R.C.S. Edin., F.R.S. Edin., Professor of Anatomy in the University of Melbourne, formerly Lecturer on Anatomy in the School of Medicine of the Royal Colleges, Edinburgh; and Examiner in Anatomy to the University of St. Andrews, to the University of Aberdeen, and to the Royal College of Surgeons of Edinburgh. London and Edinburgh: William Green and Sons. 1906. Pp. 244, with 46 illustrations. Price 7s. 6d. net.—In compiling this book Dr. Berry has aimed at giving a description of the surface anatomy of the human body and also of those appearances which may be brought to view by special appliances. He has had the advantage of the coöperation of several anatomists, including Dr. Christopher Addison and Dr. A. Logan Turner, who have revised the sections in which they are more immediately interested. The volume is arranged on the familiar lines of its class and there is little to distinguish it from the many small manuals which have appeared during the last two or three years. Amongst special points we notice that, although the author gives a choice of several methods of cranio-cerebral topography, he ignores those of Anderson and Makins and of Edward Taylor, but he describes the method of Berry and Sheppard, which we presume is his own. In this the demarcation of the motor region is effected by marking out the precentral sulcus. This is indicated by bisecting the distance between the nasion andinion and joining the point of bisection to the junction of the anterior and middle thirds of a line drawn from the nasion through the external angular process to the lambda. The lambda is placed three and a half inches above the inion, a distance which appears excessive. The account of the nasal cavities and accessory sinuses is brief but to the point and is illustrated by three capital illustrations from Dr. Logan Turner's book. Dr. Addison's method of abdominal topography is adopted and concisely described under his personal direction. The structures brought into view by the otoscope, laryngoscope, ophthalmoscope, and rhinoscope are described and depicted in a somewhat diagrammatic fashion. Several of the other illustrations are very rough and hardly up to the standard of the present day; they are, nevertheless, very useful.

Notes on General Practice. By S. M. HEBBLETHWAITE, M.D. Lond. London: The Scientific Press. 1905. Small octavo, pp. 78. Price 3s. 6d. net.—The subject-matter of this little volume would have made excellent material for a paper at a society or an article in a journal but hardly justifies publication in a book form. These notes range over a large number of subjects in practical medicine, surgery, and obstetrics. There are little attempt at arrangement and no attempt at literary style; but if the diction is at times slipshod and colloquial it is simple and intelligible. The bulk of these pages is devoted to possible errors and pitfalls in diagnosis and to "tips" and "dodges" in treatment, and the author displays a shrewd practical knowledge of everyday general practice which is likely to serve him in very good stead. But we doubt if this form of knowledge is to be conveyed in a book, for

the short, crisp instruction, which is so useful in the outpatient room, may entirely lose its perspective and value when conveyed by shorthand notes to the printed page. Dr. Hebblethwaite believes that general practitioners fall into the same pitfalls of error in succeeding generations and he cites such difficulties as obscure cases of glaucoma, of disseminated sclerosis, and of larval Graves's disease, as examples likely to lead to faulty diagnosis. But to be aware that there is such a condition as subacute glaucoma will not supply the power of diagnosing the condition if the practitioner cannot estimate ocular tension or use an ophthalmoscope with certainty. The author says correctly that "subacute glaucoma is apt to be insidious to the practitioner without special knowledge," for it is notorious that mild glaucoma is often difficult to recognise even when the patient is under the care of an ophthalmic surgeon. The effect of the perusal of these notes on the practitioner not especially trained in ophthalmic work would be to produce distrust of his own knowledge, a condition of greater safety to the patient's eyes than an over-weening confidence; yet such timidity may be productive of much discomfort to the patients; some general practitioners are prone to regard all painful conditions of the eyes as iritis, though most of them are simple conjunctivitis or hypermetropic asthenopia with inflamed conjunctiva. The real moral of Dr. Hebblethwaite's remarks on glaucoma is that if a surgeon knows nothing of ophthalmic practice he should lose no time in referring his patient to someone who does know something. Some of the notes on fractures and simple surgical procedures are practical and valuable but it is hardly wise to put up a sprained ankle with belladonna plaster which would in most cases rapidly produce an irritation of the skin preventing further fixation of the joint. Dr. Hebblethwaite waxes enthusiastic over the skill with which a colleague burrowed through the placenta in a case of placenta prævia but readers must not be misled into practising this method as a matter of routine. First recommended by Mohrenheim in 1810, it was advocated by Rigby, but has been discredited by most authorities since. Such examples as these indicate that the practice laid down in this volume is not always sound or carefully considered but its general scope is practical, ingenious, and suggestive.

The Edinburgh Stereoscopic Atlas of Anatomy. Edited by DAVID WATERSTON, M.A., M.D. Edin., F.R.C.S. Edin., F.R.S. Edin., Lecturer and Senior Demonstrator in the Department of Anatomy, University of Edinburgh. Section 3. With 51 Plates. Edinburgh: T. O. and E. C. Jack. 1905. Price £1 5s. net.—The first three views in this section complete the anatomy of the abdominal viscera which was mostly included in the second section of the atlas. In one of the new plates we find a representation of a much distended cæcum, lying in the hypogastric region and surmounted by a vermiform appendix. It is unfortunate that neither in this nor in the preceding series is there an illustration of what may be considered an average normal cæcum. In the subjects chosen a greatly distended or a prolapsed cæcum and an enormous or much displaced pelvic colon are present. However interesting and important these conditions may be from a clinical and pathological point of view, they can hardly be considered to belong to normal anatomy, a view which we also took when criticising the inclusion of a hydrocephalic brain in the first section of this atlas. We also think that a remark made in the description of the colon is likely to lead to misapprehension; the statement that "the descending colon, as is almost invariably the case in subjects prepared with formalin, is firmly contracted," is but half a truth, the contracted condition being very common whether the subject has been prepared in any way or not at all. There are but two illustrations of the pelvic viscera, these, like the photographs of the abdomen, being an overflow from

He deprecates the absence of information with regard to many important political or social events—the Great Plague and the Great Fire receive but scanty notice—but on the other hand there is abundant reference to many matters of internal interest, though even here inquiry is constantly balked by the omission of some important details. In the records of numerous petty squabbles which were brought before the Court of Assistants we hear the rumble of the thunder but we hardly know what it is all about. Thus an unfortunate examiner was charged with having written a letter which appeared in a medical publication; the letter is stigmatised as “a violation at least of Propriety in any member of the Society,” and the writer was accordingly removed and displaced as a member of the Court of Examiners, but the absolute subject of the letter is not stated. Again, in 1846, the Master, who had taken umbrage at some disparaging terms employed in the Hunterian Oration, “explained the course which he had felt it due to his position as Master of the Society to take on the occasion” and the resolution recording the warm thanks of the court is duly found in the minutes, but what the Master did is not precisely stated. The charter of the Society is given in *extenso* and in this document we find much that foreshadows and explains many of the subsequent difficulties of the Society. The duties of the master, wardens, and assistants are defined, and the charter even provides for the nomination and election of “one honest and fit Man” to be the common clerk of the said Company, and similarly for “one apt and fit Man” to be the beadle; the distinction in the terms of suitability is sufficiently curious, and the minutes show that in spite of the “corporal oath” before the master and wardens, both of these officials have frequently given trouble. The early years of the Society were not marked by a spirit of unanimity; the grocers petitioned to annul the charter of the Apothecaries, and some of the apothecaries objected to separation from the grocers, while inconvenience at the courts was caused by the non-attendance of assistants and this led to the imposition of fines. Work was further hampered by impecuniosity, in spite of loans from some of its wealthy members and of the frequent imposition of fines. Fines were at this time employed to solve every difficulty: two of the assistants quarrel and the dispute is arranged by an agreement that whoever renews the difference is to be fined £20; a man who had failed in an “art” examination on payment of a fine of £50 received his apothecary freedom and was permitted to open business; a penalty of £10 was incurred by those who privately canvassed the assistants for their “voices,” and 40s. had to be paid by any member who indiscreetly divulged the private affairs of the Company. Penalties were also incurred by those who declined to take office as master or warden, and so many seemingly valid excuses are recorded from those who did not desire to have greatness thrust upon them that doubt must be felt about the disinterestedness of some of the nominations. In 1627 a man was fined for keeping more apprentices than he ought and soon after, on separate occasions, two other fines were imposed upon offenders for failing to keep their engagements when they had accepted invitations to dine with the Lord Mayor.

But despite internal struggles the Society became

prosperous, so that in 1631 it was felt that its dignity required headquarters more fitting than a hired hall. As the result of strenuous efforts a house and grounds in Blackfriars were purchased and the first meeting at the new Hall was held on Dec. 11th, 1632. There are indications that the Society was concerned about its public appearances; it had already provided a barge and banners for Lord Mayor's Day and had attended a service at “St. Paul's Church” on Christmas Day, and had presented the Lord Mayor with a tun of wine in recognition of the condescension of his invitation, and now with the new Hall it was decided to engage a cook and a butler. Then followed hard times again, with numerous serious lawsuits, heavy taxation, and “a loan to His Majesty; so the Hall was let to a lady of title and her family as a dwelling house, the Company being permitted to hold their courts or festivals in the Hall; this tenancy, however, terminated at the end of a year and subsequently the Company of Feltmakers took the premises to hold their courts in. With the Restoration came a period of feasting during which serious business seems to have been in abeyance, though squabbles for precedence arose and had to be argued by counsel at the Guildhall. The Company, however, continued to keep close watch over apprentices, especially with a view to frustrating attempts to evade enrolment, and many prosecutions and fines resulted. Troubles with the Royal College of Physicians of London now arose, the physicians proposing (1) that apothecaries should not practise, and (2) that they should give assurance faithfully to prepare prescriptions; while the Company insisted that those connected with the College should not “keep Apothecaries in their shoppes.” Thus, even before the Great Fire the main provisions for a prolonged struggle had been formulated. The destruction of the Hall at the Great Fire necessitated economy and also led to efforts to increase the wealth of the Society by extending its scope and adding to its numbers. The rebuilding of the Hall and the erection of a laboratory occupied much of the attention of the court for two or three years, but the minute book shows that smaller matters frequently intervened, among these being the “greatest animosities between the Clarke and the Beadle.” A few months after this entry the clerk was discharged for divers misdemeanours and in the following year the beadle and his wife were turned out of their rooms for using abusive language. The new Hall was speedily utilised as a source of revenue; thus on one occasion it was let for a funeral, on another it was let as a dancing school for young ladies, and it was actually so used for two or three mornings each week and for one evening from 6 P.M. to 9 P.M. The celebrated “dispensary” dispute with the College of Physicians smouldered a long time and frequently led to much ill-feeling between the College and the Company. One of the questions then propounded still survives in regard to the out-patients of modern hospitals, viz.: “Who is to recommend fitting objects for the charity?” The physicians answered: “The ministers, churchwardens, and overseers of the poor are the best, as knowing the poor and their necessity,” and for other arguments we refer our readers to the book.

It would, in fact, be an injustice to the author of this

THE LANCET.

LONDON: SATURDAY, FEBRUARY 17, 1906.

The Coöperation of the Civil and Military Branches of the Medical Profession in Peace and War.

WE called attention last week to an address given at the West London Hospital by Surgeon-General A. H. KEOGH, O.B., Director-General of the Army Medical Service, to inaugurate a course of lectures on Army Medical Administration in its relation to the coöperation of the civil and military branches of the medical profession in peace and war. The subject is one which invites and merits serious consideration because of its having a direct bearing on the attainment of military medical efficiency, and the points touched upon by the Director-General furnish an ample field for comment. In the first place, it must never be forgotten that the civil and military are but two sides of one and the same profession. Their respective members, whether civil or military, have had the same medical training, possess similar professional qualifications, and have aims and interests in common. Moreover, under many and various conditions of our national life they are called upon to work together in peace and war, making complementary and supplementary efforts. Whatever affects the one touches the other; the higher the position of the members of our public medical services and the greater the esteem in which they are held, the better for the medical profession as a whole. All this is so obvious as to seem platitudinous, but it is not, perhaps, so commonly and thoroughly realised as should be the case; nor is it sufficiently recognised that the civil and military sides of our profession have still a great deal to learn from one another as to what medical aid in modern war means and how to make it most effective.

The Director-General, in his temperate and far-seeing words, pointed out that it was interesting to study the relation between arms and medicine, for it was certain that medical men could largely influence the successful issue of campaigns. But in order to attain this end not only is a competent knowledge of medicine in its widest sense necessary, but also some knowledge of the art of war is required in order that the medical officer may be able to fall in with the military requirements of the situation. The care of the sick and wounded is but one portion of army medical duties, and though it is the most important portion—while it certainly secures the most public prominence—the duties of sanitary organisation and of preventive measures must not be forgotten. The indebtedness of the medical service and of the army itself to the civil side of the medical profession has of late been an increasing one. London is the centre to which all medical officers must now

gravitate in course of their service. What with the number of hospitals in the metropolis, the quantity and variety of injuries and diseases within their walls, and the lectures and post-graduate courses and other opportunities for study, the army medical officer has nowadays ample means available for keeping himself abreast with advances in scientific knowledge of all sorts. Special arrangements are made to meet his case in many directions. It is easy then to see how fully in any scheme of coöperation between the civil and military branches of our profession, the civil branches are already acting their part. In times of peace, so as to be ready for times of war, the army medical officer can now get into close touch with all developments of modern medicine. But the need for reciprocity must not be lost sight of. To fit the civilian medical man for military duties some knowledge of the art of war is also required if a coöperating medical profession is to meet medical and sanitary requirements and to avoid dissipating its energies in times of emergency. The civil side of the profession must here learn from the military side—military and medical organisation, hospital administration upon the difficult basis afforded by the exigencies of campaigning, the calls of service in the field in general, and so on, concerning all these things the civilian must be instructed by the military man. It is needless to point out that all preparations and arrangements in these directions, if they are to prove efficacious in the stress and strain of war and to be preventive of lavish expenditure, should be well known and tried beforehand as far as possible in time of peace. And, as far as possible, also, the greatest stress should be laid upon matters of practical importance.

This brings us to a third point. Our army medical readers will not have failed to notice that in addition to the usual technical questions at the examinations of majors of the Royal Army Medical Corps for promotion there are now questions asked on the "laws and customs of war on land." All knowledge is useful to everybody, but we see no more urgent reason than this for compelling the medical colonel to be a forensic expert, and we do not desire under any scheme of coöperation that the civil medical man should share in such legal acquirements. We regret that the military medical officer should be asked to undergo tests in such matters. The demands of scientific medicine are now very exhausting. In every direction there is more to be learned in purely professional subjects than any medical man, military or civil, ever has time to learn. It is a pity that there should be any opportunities afforded for the wasting of valuable energy.

The History of the Society of Apothecaries of London.¹

MR. C. R. B. BARRETT, M.A., has produced a most entertaining volume concerning the Society of Apothecaries of London. He has had access to the minute books of the Society and he has from them been enabled to construct a book full of amusement and instruction.

¹ The History of the Society of Apothecaries of London. By C. R. B. Barrett, M.A. Illustrated by the Author. London: Elliot Stock, Paternoster-row. 1905. Pp. 311. 310. Price 21s. net.

notions of cleanliness, manners, order, and decency are raised to a much higher point than formerly.

Lady JERSEY, Mrs. BLAND-SUTTON, and their coadjutors have a similarly cheerful report to make in connexion with the organisation of Children's Happy Evenings, but it is obvious that private effort cannot possibly deal with even an appreciable number of the poor school children of London. Mrs. HUMPHRY WARD has estimated that if a hundred play centres were started they could deal with 100,000 children and would cost £20,000. The figures are based, of course, upon the personal knowledge gained by dealing with the eight existing play centres. We should be inclined to double this sum if the management were represented by any public body instead of being conducted by private effort. Certainly anything in London connected with education committees has a wonderful faculty of costing more money than is estimated for. That was the invariable experience under the old School Board and nothing has happened to alter the circumstances. Be this as it may, the new Minister of Education has perhaps an opportunity in the forthcoming Education Amendment Act for drafting a clause which may make it possible for the London County Council to take charge of a play centre scheme. The crying fault of modern elementary education is the want of discipline, not in class but out of it. In the large public school for the well-to-do classes boys are taught from the moment when they arrive that they have a duty to the school, that they are members of a body with traditions. They learn not to think more highly of themselves than they ought to think, they undergo discipline at the hands of their fellows and in due time as they rise in the school they exercise authority over their comrades, even as they themselves rendered obedience when they were juniors. There is nothing of this sort at a rate-supported school. But in play centres the principles of self government could and should be inculcated, and from Mrs. WARD's description of the work already done it would seem that this is recognised in all the existing centres. To learn habits of discipline early is no small benefit to children, for the boys and girls of to-day are the fathers and mothers of to-morrow. If they are trained in habits of self-control, if they are early made to feel that they have duties towards their neighbours to perform, they are far more likely to raise up progeny whom they can train in the principles of *σωφροσύνη*. This is a view of the matter which will especially appeal to all workers in psychological medicine, for undoubtedly a large proportion of the sufferers who come under their hands are the victims of self-indulgence and want of self-control.

Annotations.

"No gold mine."

THE VENTILATION OF THE SMOKING CARRIAGE.

How inefficiently, generally speaking, the average railway carriage is ventilated is strikingly illustrated in the shut up smoking compartment in which several persons have been smoking for some time. The carriage remains full of smoke and very little appears to be removed unless the window is opened. Although some immunity would appear to be

enjoyed from the irritating effects of tobacco smoke by those who have been exposed to the smoke for some time, yet it is obvious that in a carriage which is inadequately ventilated a large portion of the smoke must be inhaled, for the air that is being breathed is laden with tobacco smoke. Now, the poisonous effects of tobacco-smoking are most marked when the smoke is inhaled or when it is brought into intimate contact with the lung cells and conveyed directly into the blood. The cigarette smoker who "swallows the smoke," as it is often said, deliberately exposes himself to the risk of unmistakably poisonous symptoms, as are manifested in palpitation of the heart, dyspeptic disturbances, impairment of vision, headache, breathlessness, malaise, and so on, and precisely the same risk is run by those who remain long in a carriage which is practically always full of smoke for the want of efficient means of ventilation. Indeed, the risk in the latter case is greater, because not only is the smoke drawn from the tobacco inhaled but that escaping from the bowl of the pipe or from the lighted end of the cigarette or cigar is inhaled also, and it is well known that the smoke of smouldering tobacco has very powerful physiological effects. Amongst the highly toxic products occurring freely in tobacco smoke is carbon monoxide which has disastrous effects upon the oxygen-carrying power of the blood. Smokers in the railway carriage should guard themselves against the evils of inhaling smoke by agreeing to give the smoke an outlet by opening or partly opening the window—that is to say, if the ventilating arrangements provided prove to be useless, as is nearly always the case. The smoker who is jealous of his health enjoys smoking without having recourse to inhaling the smoke and he should see that his care to avoid the dangerous process of directly inhaling tobacco smoke is not defeated by smoking in a smoke-contaminated atmosphere which is practically never changed. For the same reason the smoking concert is an institution not free from danger and is a very frequent source of disturbance to health.

MEDICAL EXCURSIONS FOR STUDENTS OF MEDICINE.

IN THE LANCET of July 15th (p. 171) and July 22nd (p. 236), 1905, we gave a short account of some medical excursions for students of medicine which had been organised by M. Etienne Bazot. As, however, the proposals for the excursions were not set on foot until the summer vacation had commenced it was found to be impossible to carry out the scheme last year. It is hoped, however, that the scheme can be carried through this year and M. Bazot has forwarded to us the proposed programme. It must be understood that the excursions are not to be absolutely complimentary such as were the respective visits of French medical men to England and of British medical men to France, but that a certain sum will be charged after the fashion of the Voyages d'Etudes Médicales. The proposed excursion for this year is intended to leave England on April 18th and to return on April 29th. The places to be visited are Calais, Lille, Paris, Angers, Nantes, St. Malo, Mont St. Michel, Caen, Rouen, and Le Havre. The institutions of special interest to be visited are the Institut Pasteur, of which Dr. Calmette is the head, at Lille, various hospitals and the Pasteur Institute in Paris, the clinique of Dr. Monprofit at Angers, the Pasteur Institute and hospital at Nantes, the hospital and medical school at Rennes, and the hospitals at Caen. The fare for the whole excursion—namely, from London to London, including railway and steamer excursions, hotel expenses, carriages and steamers for excursions, guides, interpreters, and, in fact, everything that is needed—will be 275 francs—viz., £11 per person. The names of those

interesting history to attempt to collect further gems; we have not touched upon the vicissitudes of the barge, its glorious banners, and its use for the transport of soldiers. The Chelsea botanic garden is another noteworthy topic, this interesting possession being apparently a source of much expense, although the gardener had to provide shells for the garden walks. The detailed history is brought down to 1864, when for obvious reasons the author thinks it needful to generalise. From a perusal of this book it is evident that, like other human institutions, the Apothecaries' Society has had its periods of prosperity and its times of financial anxiety. For the latter it is also clear that lavish expenditure, in accordance with the spirit of the age, must be held to be responsible; the records of banquets are frequent and the Court certainly appears to have expended some of its funds not too happily. On the other hand, it has evidently striven to maintain a spirit of dignity and respect and it has done much to protect the interests of the large body of its Licentiates. Its activities have often been crippled by costly legal proceedings and its deliberations have frequently been interrupted by serious complaints of the misdeeds of the clerk, the beadle, and their respective wives. No doubt the minutes make the most of these internal squabbles, but they produce a droll picture of a grave court of elderly gentlemen endeavouring to understand why petty jealousies should arise and plaintively protesting that they tend much to the hindrance of the proceedings. The account given in this sumptuous volume is illustrated by numerous drawings by the author, showing many interesting details in the present building, some dating from the early history of the Hall.

The Playground of the Streets.

It is a truism which is almost a platitude that the right bringing up of a child depends as much on playtime as on schooltime. The legend that WELLINGTON said that the battle of Waterloo was won in the playing fields at Eton is, we believe, exploded, but no one would suggest that the historic battle was won in the class-rooms, while the mere fact of the existence of such a legend shows how important in British minds is a due and proper provision for the recreation of youth. And, indeed, it is not necessary to be a golf enthusiast, a compiler of cricket averages, or a student of football results to know that healthy amusement makes for the best forms of moral improvement and vital expansion. Such obvious reflections follow upon reading Mrs. HUMPHRY WARD's two recent communications to the *Times*, in which she gives some facts and figures which show both what need exists in London, and similarly in all great cities, for the provision of proper opportunities for the children's play and also what has been done through the instrumentality of herself and a few energetic coadjutors to meet that need in one or two places.

It cannot be ignorance and it must be indifference which prevents the citizens of London from seeing that the children on a part of whose education they are to spend this year some £3,000,000 are completely unprotected out of school hours from influences which infallibly undo a greater part of the good which has been done by school training and teaching. Any person who has worked in a

poor neighbourhood, and above all any medical man, must have noticed how the only playground is the streets and how such environment does not, to use Colonel NEWCOME's favourite quotation, "soften manners and prevent them from being ferocious." Mrs. WARD quotes a Hoxton schoolmaster as saying that London children do not know how to play. This is not quite accurate, whether in respect of Hoxton or other parts of London if we consider play out of doors, for everywhere the passer-by is only too conscious that the children of the neighbourhood are quite acquainted with the delights of peg-tops, tip-cat, battledore and shuttlecock, and the iron hoop. These are not games of the sort that the National Service League desires to see played regularly in schools, and their connexion with physical development is rather remote, but such as they are they are games. And London children would play the games, whose value to our boyhood is so well summed up by Dr. W. P. HERRINGHAM in another column of THE LANCET this week as well as any other children in the world indoors or out of doors if only they had the chance—if only there were places where they could play. As to indoor play or occupation there is no doubt that the average London child is quite ignorant. And how can it be otherwise? In some cases there is only one room for the whole family to live in while the parents both go out to work; at best the available living rooms must be overcrowded by the ordinary necessities of domestic life and can offer no facilities for indoor games or recreation of any sort. In such an environment how can children learn to play? If they remained indoors it could only be to lie in bed or to sit in corners, but as a matter of fact in most instances the children when they are not at school are turned into the streets by their parents. When the mother goes out to work and does not return until the evening there is no other alternative. It is impossible to leave children alone indoors because of the perils of the grate and the lamp, and so the money for fuel and oil is saved and the little ones seek the comparative safety of the streets, where they play or huddle together "until mother comes home." School time ends at 4.30 P.M. and the homes of the children will possibly not be available to them until 8 P.M., and it was with a view to find some means of looking after the children between these hours that the evening classes and organised games were started by a group of practical philanthropists. The movement began at the Passmore Edwards Settlement in Tavistock-place, rooms being opened from 5.30 to 6.45 P.M. in the winter, where the children were received and play was organised for them. In the summer the children were transferred to a garden belonging to the Duke of BEDFORD which lies at the back of the Passmore Edwards Settlement. The scheme proved very successful, so that it is not surprising that about a year ago sundry charitable persons gave sums of money amounting to about £800 per annum for two years to carry on similar work, and a committee was formed which inaugurated eight play centres in various poor districts of London. The education committee of the London County Council lent its schools and, we are informed, supplies lighting, warming, and "equipment." Reports on the working of the scheme by those who are well qualified to judge show that the results are most successful. The children are kept out of the street, they learn simple occupations, and their

as "*oleum vitrioli dulce*" but it appears to have been forgotten for a time until rediscovered by Frobenius, a London apothecary, about the year 1730. Valerius Cordus was also acquainted with the oils of anise and cloves. The seventeenth century was rich in the discovery and introduction of new drugs, including benzoic acid; tartar emetic, produced by *diabolo van Mynsicht*; ammonium acetate, introduced by *Minderer*, whence the name *Mindererus spirit*; phosphorus, discovered by Brand in urine; borax, which was introduced by the Venetians in the seventeenth century, though probably known at an earlier period; sodium potassium tartrate, introduced by P. Seignette, an apothecary of Rochelle, whence the names *Seignette salts* and *lochéllé salts*; and magnesium sulphate, discovered by *Lehemiah Grew* in the water of a mineral spring at Epsom. *Flauher*, who lived in the same century, gave his name to sodium sulphate and was acquainted with other chemical substances. Of these, it is important to notice zinc chloride, known as "*oleum lapidis calaminaris*," and potassium permanganate. During the eighteenth century Scheele enriched the materia medica by the discovery of chlorine which was first known as "*dephlogisticated muriatic acid*"; glycerine, which he discovered during the preparation of lead plaster and named the "*sweet principle of oils*"; and lactic, citric, gallic, and tartaric acids. Secret remedies were employed in very early times. Thus, magnesium carbonate was introduced as a secret remedy early in the eighteenth century under the name "*magnesia alba*." Other drugs introduced during this century include boric acid produced by *Homborg* and known as "*sal sedativum Homborgi*," phosphoric acid, magnesium oxide, acetic ether, tannic acid, bismuth subnitrate, sodium carbonate, and thymol. It is unnecessary to recapitulate here the vast number of important elements—alkaloids, glucosides, and inorganic salts—which were discovered during the nineteenth century, but a brief reference to the order of the introduction of the so-called synthetic remedies is of particular interest. The first synthetic remedy would appear to have been iodoform, which was produced by *Sérullas* in 1822 and introduced into the materia medica about 1837. Phenol was discovered in coal-tar by *Runge* in 1834; salicylic acid was prepared by *Kolbe* in 1839 and introduced as an antiseptic in 1873. *Liebig* produced chloral hydrate in 1832 and *Liebreich* introduced it into medicine in 1869. Chloroform, discovered independently by *Liebig* and by *Soubeyran* in 1831, was first used as an anæsthetic by *Simpson* in 1847. Resorcin was discovered by *Hlasiwetz* in 1864, sodium salicylate was first prepared in 1875, naphthol was produced in 1891, and antipyrine was discovered by *Knorr* in 1884. Then followed hundreds of other synthetic substances, including acetanilid (1886), phenacetin and raccharin (1887), sulphonal (1888), and trional (1893).

A "FACING FAKE."

In a good many instances the public is to be blamed for the existence of certain adulterations by giving a silly preference for those articles which appeal to the judgment merely on the score of attractive appearance. The loaf of bread must be spotlessly white, the preserved peas must be brilliant with copper colouring, and other characteristics are eagerly sought after without regard to the damaging effects, dietetically speaking, to which manipulation in the directions indicated may give rise. Some people, it would seem, regard a polished appearance as indicative of quality in rice, and, of course, a simple trick is devised falsely to impart a polish to rice, and thus the stupid criterion is satisfied. Mr. Cecil A. Cribb, B.Sc., F.I.C., and Mr. P. A. Ellis Richards, F.I.C., have recently found that a compound of magnesia and silica is largely employed in this polishing process and in a paper read before the Society of Public Analysts they record an interesting series of analyses giving the amounts of

extraneous silicious matter found in certain samples. The substances which it is suggested are used in the polishing process are French chalk, powdered talc, and mica. Rice is also polished by other processes which would appear to be less objectionable. There can be little doubt that if rice is treated in a proper way for cooking—that is, by soaking it and washing it before it is steamed—the cooked product will probably be freed thereby from the added mineral material. We cannot, however, find the slightest justification for the process which clearly places the rice so treated in the category of articles that are made to seem that which they are not. The prevalence of disease due to the action of irritants in the intestinal canal has found, according to some observers, explanation either in the impoverishment of foodstuffs by impudent manipulation or by deliberate addition of objectionable substances, and this newly discovered trick adds force to the suggestion. This "*facing fake*" should be stopped.

FATAL RESULTS FROM SUBCUTANEOUS INJECTION OF METALLIC MERCURY.

IN recent years the treatment of syphilis by subcutaneous injections of mercury has become very common. Yet serious and even fatal results have from time to time been recorded and probably by no means represent all the casualties. At the meeting of the Société Médicale des Hôpitaux of Paris on Jan. 12th M. L. Noir and M. P. Camus reported the following case. A woman was admitted into hospital suffering from intense ulcerative and gangrenous stomatitis. Two months previously she had a sore on one of the labia. She was put under mercurial treatment and at intervals of eight days seven drops of "grey oil" were injected into the muscles of the buttock on four occasions—i.e., altogether about from 28 to 30 centigrammes of metallic mercury. Three days after the last injection salivation began, although she had taken great care to keep her teeth clean. On admission the gums were red and swollen and in places superficially ulcerated and there were abundant salivation and greater factor of the breath. The tongue was swollen and painful. On the internal surface of the left cheek was an ulcer of the size of a two-franc piece, with a greyish and sanious coating. There were no signs of syphilis. The temperature was 99.6° F. in the morning and 100.7° in the evening. The urine was very albuminous. The patient was in a state of torpor. The taking of food was painful and only a small quantity of milk was imbibed. The stools were frequent, fetid, and blackish. Potassium chlorate was given and the mouth and teeth were frequently washed. Twelve days after admission the state of the mouth was much worse. The ulcer on the cheek was of the size of a five-franc piece and was covered with a slough. The odour was very fetid. The temperature did not rise above 98.9°. Nourishment was taken with great difficulty and in insufficient quantity. The diarrhoea persisted and the patient wasted. A mouth-wash of oxygenated water was prescribed. On the internal surface of each cheek was a gangrenous patch occupying more than half its extent and surrounded by a line of demarcation resembling in appearance noma. On the external surface of the left cheek the skin was red and oedematous. There were also gangrenous patches on the soft and hard palate and the lower surface of the tip of the tongue. Mastication was impossible and deglutition and phonation were very painful. The emaciation progressed rapidly and the diarrhoea increased. Vomiting occurred and in spite of slight improvement of the mouth the patient became anæmic and weaker and died in a state of hypothermia (the temperature being 95.5° and 94.1° 12 and six hours before death respectively). The necropsy showed that the buccal ulcers were in process of repair. On the stomach and intestines were numerous ecchymoses.

intending to take part in the excursion should be sent in as soon as possible and must be sent in before April 1st. The subscription may be sent in at the same time as the names are sent in but must be sent in not later than April 10th. Names and subscriptions will be received by, and any other information may be obtained from, M. Etienne Bazot, Administrateur-fondateur des Excursions Médicales Internationales au Service-Annexe de l'Enseignement, 1, Rue de l'Echelle, Paris (1er). It is much to be hoped that British medical students will take advantage of this opportunity to visit French hospitals under the guidance of their French *confères*. Besides the purely professional visits to hospitals and the like the programme provides for receptions, luncheons, and visits to various places of interest from an historical or other point of view. M. Bazot informs us that he hopes shortly to have some notices printed giving all details of the excursions and he will be most grateful if the deans of the various medical schools will have these notices posted in some conspicuous place. We may further mention that the honorary president of the organisation is M. Roux, the well-known director of the Pasteur Institute at Paris.

THE ETIOLOGY AND TREATMENT OF HERNIA IN ADULTS.

WE have published in THE LANCET several articles by Mr. R. Hamilton Russell of Melbourne relating to the cause and treatment of hernia, especially in children. In these articles he has maintained that no such condition as acquired hernia ever exists in childhood and he has supported his opinion by many ingenious arguments. In the issue of THE LANCET of Feb. 10th, p. 363, we published an article by Mr. R. W. Murray of Liverpool on the Etiology of Oblique Inguinal Hernia, in which he adduces several arguments in support of Mr. Russell's views, and especially he shows that in 100 post-mortem examinations potential hernial sacs were found in 21 cases; 61 of the bodies were males and 13 of these had potential sacs, and 39 were females with eight potential sacs. Mr. Russell read at the recent meeting of the Australasian Medical Congress a paper on the Etiology and Treatment of Inguinal Hernia in Adults, of which the following is a *résumé*. In the first part of his paper Mr. Russell recapitulates in brief what he has written on previous occasions and then he comes to his main contention—namely, that acquired hernia, other than traumatic, has no existence even in adults. One of the strongest arguments which Mr. Russell formerly employed in favour of the congenital origin of all inguinal hernia in children was the result of operative removal of the sac, for in childhood mere removal of the sac is almost always sufficient to prevent a return of the hernia. This argument, Mr. Russell maintains, is equally valid in adults, for his statistics go to show that recurrence after mere removal of the sac in adults is very rarely seen. These statistics are based on 89 cases, or rather on 63, for 26 of the total number on whom he operated could not be traced. Of these 63 cases recurrence was known to have taken place in only three. One was a woman with an ordinary inguinal hernia which recurred almost immediately the patient got up after the operation; in the second Mr. Russell was unable to satisfy himself that the operation had been efficiently done and he predicted that recurrence would ensue and his prophecy was fulfilled five months later; and in the third case also Mr. Russell thinks he did not tie the sac sufficiently high. If we may take it that only three recurrences supervened out of 63 cases this is only 5 per cent., and it is really a very low rate of recurrence. Unfortunately the fact that it was not possible to trace 26 of the 89 cases must deprive the statistics of much of their value. However, the number of recurrences is much less than most

surgeons would have expected. Although the operation which Mr. Russell performs has been described as mere ligation and removal of the sac, he lays great stress on the manner in which the operation should be done. He considers that before the sac is tied all lax peritoneum must be drawn out through the internal ring, so that the ligature may be applied as high up as possible, and then the opening in the abdominal wall is to be closed by concentric traction upon the peritoneum and fascia. No stitches are placed in the muscles and Mr. Russell thinks that if the sutures applied in the ordinary methods of radical cure are not needed they must be harmful and therefore that it is better to dispense with them. Mr. Russell has evidently devoted much care to the consideration of the radical cure of inguinal hernia and his opinions are entitled to careful examination. They are, however, so opposed to the ideas now current as to the etiology and treatment of hernia that it will require some time to enable them to receive the consideration which they deserve. On the results of the method of treatment the matter must be decided.

A CHRONOLOGICAL REVIEW OF THE CHEMICAL MATERIA MEDICA.

AN interesting list of the substances in the *materia medica* has been arranged in the chronological order of their introduction by Dr. Friedrich Sperling.¹ Many of the substances which are still freely used date back to very ancient times. Thus, sulphur is mentioned in the oldest scientific works, ammonium chloride was known to Herodotus, potassium carbonate to Dioscorides, and mercury to Aristotle, while vinegar, lead plaster, and soap are noted in the works of Pliny. Zinc oxide was generally known to the ancients as "cadmia" or "pompheolix," but the alchemists named it "lana philosophica," or, on account of its whiteness, "nix alba"; cupric sulphate was the "chalcacanthum" of the Greeks and the "atramentum sutorium" of the Romans, and crude cream of tartar was the "faex vini" of the Romans and was known also to the Greeks. Of other present-day drugs which were known to the ancients the most important are gypsum, lead oxide, ferrous sulphate, alum, sulphide of antimony, oil of turpentine, and sodium chloride. Many important chemical substances were introduced by the Arabians, including hydrochloric acid, diluted alcohol, and camphor, of which the last named was first brought to Europe about the middle of the sixth century. In addition to these substances the celebrated Arabian physician Geber was acquainted with potassium nitrate (*sal petre*), nitric acid, arsenious acid, mercuric chloride (known also to Rhazes and Avicenna), mercuric oxide, caustic potash, and diluted ammonia. Geber was familiar also with silver nitrate and lead acetate, but the former was introduced into medicine by Angelus Sala, in the seventeenth century, under the names "*magisterium argenti*" and "*crystalli Diane*," while the latter does not appear to have been used as a medicine until 1760 when Goulard produced what was known as "*aqua vegetomineralis Goulardi*." During the thirteenth century stronger alcohol was introduced into the *materia medica* by Raymundus Lullus as "*ultima consiliatio corporis humani*." White precipitate and ammonium carbonate (from urine) were introduced in the same century. The contributions of the fifteenth century were sulphuric acid—attributed to Basilus Valentinus, who was acquainted also with zinc sulphate—ferric chloride, and sweet spirit of nitre. Paracelsus gave his name to potassium sulphate, which was described by Oswald Croll about 1608 as "*specificum purgans Paracelsi*." Mercurous chloride was known in Europe in the sixteenth century and sulphuric ether was discovered by Valerius Cordus about 1540. He described

¹ Pharmaceutische Post, 1905, p. 175, reviewed in the American Journal of Pharmacy.

and the condition of the blood was improved. On July 30th the patient was discharged looking and feeling well. The spleen was still enlarged though smaller than before. The red corpuscles numbered 4,260,000 and the white 4200; the hæmoglobin amounted to 62 per cent. The treatment of splenic anemia generally is unsatisfactory. An Italian physician, Dr. Bozzolo, has recorded three cases of Banti's disease (the form of splenic anemia with which Dr. Bramwell's case corresponds) in which great improvement took place under the x rays. He states that the action is slower than in leukaemia.

THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

DURING the second half of the winter session, 1905-06, a series of lectures and demonstrations will be delivered at 4 P.M. on Wednesdays to March 28th inclusive. The subjects taken on each date will be as follows. On Feb. 21st, Bronchiectasis, by Dr. R. Maguire; on Feb. 28th, a demonstration of Clinical Cases, by Dr. S. H. Habershon; on March 7th, Types of Pulmonary Tuberculosis, by Dr. Horton-Smith-Hartley; on March 14th, Mitral Stenosis, by Dr. Hector Mackenzie; on March 21st, the Selection of Cases for Sanatorium Treatment, by Dr. Arthur C. Latham; and on March 28th, the Characters and Causes of Cough in Children, by Dr. R. A. Young. The lectures are free to all qualified medical practitioners and to students of medicine.

THE TREATMENT OF DIABETES MELLITUS BY ACID EXTRACT OF DUODENAL MUCOUS MEMBRANE.

AMONGST some interesting papers on bio-chemical subjects contributed to the first number of the *Bio-Chemical Journal*, which will be published in monthly numbers by the bio-chemical department of the University of Liverpool, is one under the above heading by Professor Benjamin Moore, Dr. Edward S. Edie, and Dr. John Hill Abram. It has been clearly shown by Bayliss and Starling,¹ that the activity of the pancreas, so far as its external secretion is concerned, is normally called forth by chemical agency by means of a substance termed by these investigators *secretin*, which is formed by the cells of the duodenal mucous membrane and carried to the pancreatic cells in the blood stream. If it be accepted that the duodenum yields a chemical excitant for the internal secretion of the pancreas and that in the absence of the internal secretion glycosuria results, then, as is suggested in this recent paper, there are three places in the chain at which weakness due to functional or other disarrangement may occur and lead to a breakdown and the appearance of diabetic conditions. This breakdown may occur at the duodenum on account of the non-secretion of the excitant, or may take place at the pancreas, as although the excitant is formed and carried to the pancreas these cells may not be capable of excitation either from complete morbid change or from some functional alteration in their metabolism; or there is the possibility that even when the duodenum is normal and supplying its excitant and the pancreas is also normal, yielding as a result of excitation its internal secretion, yet there are changes in the oxidising tissues, such as the liver or the muscles, which prevent the oxidising function of these from coming into operation. It follows that only in the first class of case could benefit be expected to follow in a diabetic patient from administration of extracts of duodenum. The number of cases published in this paper which were treated with the acid extract of duodenal mucous membrane was only three,² but the results obtained were

decidedly encouraging, especially as two of the patients were quite young, in which case the prognosis is generally held to be unfavourable. In these cases the amount of sugar was very high and yet the complete absence of sugar rapidly followed the use of the extract. It is suggested that the cause of the glycosuria in these cases is due to the failure of the chemical excitant from the duodenum and that this in the end would lead to permanent abolition of the internal secretion of the pancreas. The stimulant to the pancreas re-starts the internal secretion and since the glycosuria does not reappear on ceasing to give the extract the administration appears to stimulate the functional activity of the duodenum. It is admitted, however, that further watching is required and a larger number of cases must be placed under observation before definite conclusions can be drawn.

CHILDREN WHO ARE SPEECHLESS BUT HAVE HEARING.

AN annotation under this heading which appeared in our issue of Jan. 27th, p. 241, described a curious type of abnormal cerebration exemplified by children whose action can be controlled by spoken words, although they neither speak themselves nor make any response in words. Owing to their possession of the faculty of hearing these children are not provided for under the Act relative to the education of blind and deaf children. As the Education (Defective and Epileptic Children) Act, 1899, requires the school authorities to determine what children are defective, no comprehensive scheme of policy has been arrived at and there is often a difficulty in providing the special form of training necessary for these children. Progress in this direction would be facilitated by teachers becoming acquainted with the rudiments of psychology and cerebral physiology and a course of eight lectures with this object in view is being delivered by Dr. G. E. Shuttleworth. The earlier lectures have been given at 36A, Longridge-road, Earl's Court, London, S.W., on Wednesdays, at 8 P.M., and the last three, on Types of Mentally Defective Children, Methods of Training, and General Management, will probably be given at Ealing on Thursday afternoons. For terms and particulars application should be made by letter to Miss Bertha James, at the above address, which is the headquarters of the "Society of the Crown of our Lord," an organisation for the benefit of the mentally afflicted.

THE INSANITARY CONDITION OF IMMIGRANT SHIPS.

ATTENTION was drawn in THE LANCET of Feb. 3rd, p. 331, to the fact that all the immigrant ships which come into the Port of London fly foreign flags and that some of them are in a particularly filthy state. Emphasis has been placed upon these statements by the recent publication of the report to the Corporation of London of Dr. Herbert Williams, medical officer of health for the port, who deals fully in an interesting document with the medical inspection of aliens. Since the new Aliens Act has come into force the report states that on the whole the medical inspection of immigrants has worked very smoothly. Up to the time of the publication of the report and since Jan. 1st 33 immigrant ships have entered carrying 1164 aliens in the steerage, of whom 17 have been rejected as "undesirable" from a medical standpoint. Ten of these have been permitted to land by the Immigration Board, while seven have been deported. From reports made by the sanitary authorities in regard to the accommodation provided for aliens and the general conditions on some ships the medical officer gives extracts. These go to show that reforms are here considerably

¹ THE LANCET, August 6th, 1904, p. 357.

² THE LANCET, Jan. 27th, 1905, p. 220.

The colon was congested and covered with a greyish-green gelatinous coating. The kidneys showed acute nephritis, the epithelium being in a state of granular and granulo-fatty degeneration. It is noteworthy that the doses of mercury administered were not large and that the toxic symptoms appeared some time after the administration. Some years ago Mr. Jonathan Hutchinson¹ quoted cases similar to that related above and deprecated the use of mercurial injections in the treatment of syphilis. He pointed out that the advantage of the method consisted in placing in the patient's tissues a more or less lasting supply of mercury but that this constituted at the same time a danger. For if salivation be caused by mercury given by the mouth prompt stoppage of the drug will usually prevent ill consequences. Not so, if a quantity of an insoluble preparation of mercury be injected in order that it may be gradually absorbed. Then only excision of the part can prevent its continuous absorption. At the following meeting of the Société Médicale des Hôpitaux M. Sicard reported a case in which this had to be done. A young man was given weekly an injection of "grey oil" containing the regular dose of from eight to ten centigrammes of metallic mercury. Three days after the fourth injection severe toxic symptoms—stomatitis, albuminuria, nausea, and enteritis—rapidly appeared. At the site of the injections in the left buttock was a large swelling. Radiography showed the presence of metallic mercury. The swelling was excised and was found to contain lardaceous material in which were the remains of the mercury. The symptoms diminished and recovery followed.

VACCINATION IN CHINA.

THE past year, 1905, was the centenary of the introduction of vaccination into China. In 1805 a Mr. Alexander Pearson, surgeon in the Honourable East India Company's service, wrote a small treatise on vaccination which was translated into Chinese by that profound oriental scholar, Sir George Thomas Staunton. The translation as circulated in China was a thin volume covered with the customary yellow paper and entitled "English recently issued Vaccination Rare-Book." "Rare-book" in this case means valuable or important book. On the back page of the work, which is really the title-page, there is a cut representing a human arm with a largish circle above the elbow to indicate the position of the vaccination mark. On the left of the arm a smudge, done in Indian ink, represents a pustule and near the foot of the page is a lancet, the blade and handle of which are covered with Chinese characters. Staunton's translation of Pearson's book was published in Canton, where in 1817 a native tract on the subject appeared and was republished in Peking in 1828. In this native tract part of Staunton's translation was incorporated. "The discovery of vaccination," says Dr. J. Dudgeon in his "Report on the Health of Peking" (1871) "is ascribed [in this tract] to a Western barbarian doctor named Ohan-na (Jenner), and the story of its having been brought by a ship from Manila to Macao, which had children on board for the purpose of keeping up the supply of lymph, is related. The terms English and England are studiously avoided. When in 1828 vaccination was introduced into the north of China [by the Prefect Tseng], it was proposed to have a relay of boys on the road from Canton to be vaccinated every eight days; but this plan was abandoned, and crusts were sent, which succeeded. In 1871 there were several vaccine establishments in Peking." Although vaccination is mixed up in the books and practice of the Chinese with much that is absurd and superstitious, yet the fact remains that it has effected a revolution in the health of China. "How fortunate it is," exclaims Dr.

Dudgeon, "that the Chinese have taken so kindly to vaccination. When the great oriental peoples have become fully protected, there may be some hope of exterminating this dreadful scourge [of small-pox]. Except for this beneficent discovery no European community could hold India or live in China."

WHAT IS WHISKY?

AT North London police court last Monday the evidence for the defence was concluded and the magistrate, Mr. Fordham, marked the summonses as adjourned for 14 days to enable him to give his decision. He thought that the case was of considerable public importance and before making up his mind on the question at issue he should read carefully through the whole of the evidence. The case has thus occupied the court on 12 occasions. Dr. F. W. Tunncliffe was the last important witness called on behalf of the defence and he stated that the characteristic of whisky which gives its food value was alcohol in a palatable and pleasant form. He knew of no special value of pot-still as against patent-still whisky or any difference between them as regards their effects. It was merely a question, he thought, of flavour, some patients exhibiting a preference for a "full" and others for a mild flavour. Asked why he did not give rectified spirit as a drug he answered because it was not alcohol in a palatable form. Mr. John McNab, jun., representing a firm of distillers in Edinburgh, said that for 51 years his firm had made all-malt whisky from a patent still. Another distiller said that he supplied both grain and malt whisky, the former being invoiced as grain aqua and the latter as malt aqua. Mr. Fordham's decision will be delivered on Monday, Feb. 28th.

TREATMENT OF SPLENIC ANÆMIA WITH THE X RAYS.

A CONSIDERABLE number of cases has now been recorded in which great benefit was obtained from the use of the x rays in leukaemia and it might be expected that in other blood diseases they would also prove beneficial. In *Clinical Studies* for October, 1905, Dr. Byrom Bramwell has reported a case of splenic anæmia in which great improvement appeared to be due to the x rays. A man, aged 27 years, was admitted into hospital on May 21st, 1905. He had good health until March 15th, 1902, when he was seized with acute pain in the left side of the abdomen and vomited bright red blood. The hæmatemesis continued for 18 hours. After this he had never felt strong and had been fallow. He worked on and off until March, 1904, when he had another severe attack of hæmatemesis. On admission he was very fallow. The skin was of a bright orange colour. The lips and conjunctivæ were very pale. The spleen extended three inches below the ribs. A few small lymphatic glands were felt in the axillæ and neck. The liver seemed small. Loud blowing murmurs were heard over the heart in all the areas and there was a venous hum in the neck. The urine was pale and contained a trace of albumin. He complained of pain in the stomach which increased after meals. The red corpuscles numbered 4,000,000 and the white 3800 per cubic millimetre and the hæmoglobin amounted to 48 per cent. The red corpuscles were very pale and showed slight poikilocytosis. The differential count of the leucocytes was practically normal. Thus the character of the blood excluded pernicious anæmia and leukaemia. On May 30th 53 ounces of blood were vomited and for several days blood was vomited in small quantities. On June 5th the red corpuscles had fallen to 2,440,000 and the hæmoglobin to 20 per cent. Slow improvement took place under iron and rest in bed. On the 22nd the daily application of the x rays was begun and rapid improvement occurred. On the 28th the yellow colour of the skin was much diminished

¹ Archives of Surgery January, 1899.

too long for a lesson. The last quarter is pure waste and had much better be given to recreation. But neither physical drill nor any other form of exercise than sheer play can give it.

2. *Athletic sports.*—Races and jumping enter so little into the ordinary life of boys that they need not be discussed at length. They form a centre of interest for a few during a short time of the year and that is all. I do not think at all highly of their effects and I think that long races are rather harmful than otherwise. Similarly school runs ought to be strictly graduated. The late Mr. Almond used to turn his boys out in sweaters and flannels on a wet day when they could not play games and make them take an hour's exercise of mixed running and walking. The same system is adopted now in other schools, at Winchester for instance. This seems to me an excellent plan. Swimming ought to be taught to every boy, but much more for its use than for its physical effect. It is very hard work, but speaking as a good swimmer myself I am sure that it is not very good as exercise. It is very tiring without being at all refreshing. Bicycling is simply an amusement.

3. *Physical drill.*—By this is meant a set of exercises, performed to order, either with no apparatus at all, or with moveable things like dumb-bells and Indian clubs, and not with any fixed apparatus like bars, horses, ladders, or ropes. There are any number of such courses set out in text-books. The London School Board uses Mr. Chesterton's, the Birmingham Board uses Carter and Bott's, Leeds has one of its own, and so on. The basis of all is the Swedish principle. The children are not taught to perform feats of strength but are put through certain movements in order to develop their bodies. There are breathing exercises, to make them breathe through the nose and to expand the chest, which are given separately and in combination with others. There are head movements, to strengthen the neck muscles, arm movements, trunk movements, leg movements, movements combining the trunk and arms and the legs and arms, balance movements and others. A certain amount of marching, turning, and forming of lines goes with them to get the children into position. The whole is excellently adapted to develop every portion of the body. This is sometimes called "military drill" or "physical drill of a military character." There is, however, nothing military about it except that, since it is an excellent training, it is used in the services. These certainly supply a want even when games are played. Games develop the legs but they have little effect on the arms, the chest, or the trunk. Yet these parts are as valuable as the legs, and, accordingly, when, as in the army and navy, the aim is to get general strength and development this physical drill is regularly and systematically employed. There are hardly any statistics of the effect upon children of physical drill. The work is so little that not much change is to be expected and the natural growth at that age is rapid. What few there are tell distinctly in its favour even so.

In the navy there are regular records for recruits of 17 and 18 years of age. In a group of 32, the figures of which I have before me, two classes, the course lasting three and a half months, the averages are:—

	Age.	Weight.	Chest girth.
Begins	17.11	125½ lb.	32.8 in.
Ends	18.2	131	34.5

Four out of the 32 lost weight, the rest all gained. Only one did not gain in chest girth.

I think all boys and girls ought to go through these exercises and ought to be taught that it is their proper ambition to develop their bodies and to be as well grown and strong as they can. Almond used to speak of it as a religious duty and of loafing and bad hygiene as physical sin. Where, as in elementary schools, games are little played physical drill is still more necessary, and it ought always to take place in the open air if possible. If it is to have a full effect it must be properly taught and properly done. The exercises can be easily performed in such a way as to be of no real benefit. The teachers must therefore understand the principles of it themselves and must see that it is carried out accurately. Also, it ought to take place every day and for a certain time. In the report of the Royal Commission on Physical Training (Scotland) the teachers and inspectors were quite unanimous in its favour. They said it improved discipline and developed the

children's bodies. But they nearly all of them said that they could not give more than half an hour a week to it because of the multiplicity of the subjects which the children had to learn. Leeds, again, gives half an hour a week.⁵ That amount of time is simply ridiculous. Birmingham⁶ gives one hour and 40 minutes, which is better though still insufficient. Before the Royal Commission on Physical Training Mr. Wickham, head master of Twyford, said that he gave about two hours a week to it and was prevented from giving more by the requirements of the public schools. The evil lies in these. The number of subjects which they require boys to know is simply dissipating and though, if I may judge from Mr. Benson's remarks,⁷ the bad effect is to some extent recognised, yet there is no doubt that a great deal remains to be done to simplify education.

When boys get older and have a real wish to develop themselves there is nothing equal to Sandow's system. He teaches very slow, even, and strong movements against the resistance either of the opposing muscles or of apparatus. It is very hard work and on that account unsuitable for children but it is excellent exercise, producing a feeling of vigour and good health, and its results are really surprising. The following are the measurements of a young man, aged 20 years, before and after 23 lessons.

Date.	Neck	Chest		Right arm.	Right forearm.	Waist.	Right thigh.	Right calf.	Weight.
		Contract.	Expand.						
29/10/03	14½	36½	39	12½	10½	29½	22½	13½	11st. 11lb.
10/12/03	14½	38	42½	15	11½	30	23½	15½	11st. 11½lb.

The great fault about physical drill is that it is uninteresting. It is a lighter lesson than the others and better liked. But still it is a lesson and no recreation. Griesbach and Wagner⁸ found with the æthesiometer that it did not perceptibly improve the cutaneous sensation which greatly deteriorates with intellectual fatigue, and Kemles found with the ergograph that an hour's physical drill was as exhausting as an hour's mathematics. Mr. Sharple's⁹ says that the institution of football competitions for elementary schools which is entirely owing to the school teachers—I believe they are some of the most devoted people in the country—has done more for the boys than all the drills and calisthenics put together. I think he is perfectly right. Mr. Wickham says practically the same thing. But no one would compare physical drill for a moment to games. It is a necessary supplement to games and it is the more necessary the fewer games there are. It cannot possibly take their place.

Gymnastics in which bars, ropes, horses, and other fixed apparatus are employed should not be taught seriously to children under 14 years of age. Their muscles are not strong enough and they strain themselves. But there is nothing they enjoy more than fooling about with a few ropes and swings and this, which Mr. Wickham¹⁰ calls the monkey-house use of the gymnasium, is a first-rate form of play. When seriously taught gymnastics produce great precision of movement, develop the shoulders well, and give men a good deal of pluck. A striking instance is given by Sir Ian Hamilton¹¹ The cadets of Potsdam are, he says, much better trained than ours at Sandhurst. One of their exercises is to go up on a platform 15 or 18 feet high, stand on their heads on the edge of it, and throw themselves off it backwards on to some soft earth beneath. That is a special exercise to teach them pluck and there is no question about the pluck required to do it. Gymnastics are interesting and boys like them. At Winchester every boy is put through two terms of gymnasium and has to pass a certain standard. This is really physical drill with a few gymnastics added. A certain number of boys, Mr. Farley tells me, take the gymnasium as their regular form of exercise, preferring it to games. When he and I were in college together there were no

⁵ Parliamentary Papers, Special Reports, 1893, vol. xxiv., p. 218.

⁶ Ibid., p. 207.

⁷ Loc. cit.

⁸ Parliamentary Papers, Special Reports, 1902, vol. xxvii., p. 523; Parex on the Measurement of Mental Fatigue in Germany.

⁹ Parliamentary Papers, 1893, vol. xxiv., p. 159.

¹⁰ Ibid., 1900, vol. xxii., p. 327.

¹¹ Royal Commission on Physical Training, 1903, vol. II., p. 509.

⁴ See Royal Commission on Physical Training, vol. I., Appendix.

needed. It appears, for instance, that in a vessel sailing from St. Petersburg, with 305 aliens aboard, an especially filthy state prevailed. Both air space and floor space were palpably insufficient and no provision was made for the separation of sexes. The lighting and ventilation were inadequate and provisions scanty. Another very objectionable feature of many of the Russian immigrant ships running to London appears to be that the after main deck is frequently occupied by horses so that in the case of bad weather the passengers must be confined to their quarters. Dr. Williams recommends that the facts should be reported to the Board of Trade and to the Russian Consul-General in London. We have had an opportunity through a representative of inspecting one of these ships and certainly the state of affairs described in the reports received by Dr. Williams cannot have been exaggerated. The lavatory accommodation for females in one ship which our representative inspected is not fit for description even in a medical journal.

WE are informed by the Director of Auxiliary Forces that "Surgeon-Captain and Honorary Surgeon-Major Richard Charles Mason Pooley, late 1st Volunteer Battalion the Duke of Cornwall's Light Infantry, possesses the Volunteer Officers' Decoration." We are happy to give publicity to the fact—the same publicity as we have already given to our statement of inability to find any official record of the granting of the honour.

BEFORE the Fifteenth International Congress of Medicine Professor Rubert W. Boyce, F.R.S., will give an address on the Prophylaxis of Yellow Fever as the Result of the 1905 Epidemic in Central America and New Orleans. This address will take the place of the communication promised by Sir Patrick Manson, who is unavoidably prevented from attending the meeting at Lisbon.

THE King has given to Mr. Reginald Harrison, F.R.C.S. Eng., His Majesty's Royal licence and authority to accept and to wear the Insignia of the First Class of the Imperial Ottoman Order of the Medjidieh, conferred upon him by His Highness the Khedive of Egypt, authorised by his Imperial Majesty the Sultan of Turkey, in recognition of valuable services rendered by him.

THE medical officer of health of the Cape Colony reports that for the week ending Jan. 20th the condition of the Colony as regards plague was as follows. No case of plague in man or other animal was discovered throughout the Colony except at Port Elizabeth, where 7 rats and 1 mouse were found to be plague-infected.

Dr. William Alexander Osborne, professor of physiology and histology in the University of Melbourne, has been appointed by the Senate to represent the University of London and to present an address at the forthcoming celebration of the jubilee of the University of Melbourne in April next.

THE death-rates from pulmonary tuberculosis in England and Wales during the years 1903 and 1904 will be of interest to our readers. For 1903 the death-rate per 1,000,000 was 1203; for 1904 it was 1236; but the latter figure is given subject to correction.

THE anniversary dinner of the Medical Society of London will be held at the Whitehall Rooms, Hôtel Métropole, on Wednesday, March 14th, at 7.30 P.M.

ON PHYSICAL TRAINING IN SCHOOLS.

BY W. P. HERRINGHAM, M.D. OXON., F.R.O.P. LOND.,
PHYSICIAN TO, AND LECTURER ON FORENSIC MEDICINE AT, ST. BAR
THOLOMEW'S HOSPITAL.

THE main object of the National Service League is to advocate universal military training for adults as the only means of rendering the empire secure, but we understand that you did not wish to hear about the military needs of the country so much as about the physical education of boys and girls. This we also advocate both as a matter of public health and as a preparation for the citizen army of the future. For this reason the league deputed an expert in physical education, Mr. Horsfall, and a physician, myself, rather than a soldier to address you.

The chief methods of physical education are: (1) games; (2) athletic sports, swimming, and such other exercises as are pursued for pleasure; (3) physical drill and gymnastics; and (4) military drill and rifle practice. I propose to discuss the effect of each of these classes separately.

1. *Games*—These are the distinctive feature of English school life and ought always to hold the foremost place. Pleasure is an enormous advantage to any sort of education and no other physical training gives anything like so much pleasure as games. They are the natural exercise for children and they are played in the open air. They have a very good effect upon the body. They train the limbs more than the chest or trunk but they produce a quickness of eye and of hand which no other exercise can give. In physiological language they improve the nervous reflexes. They have also an excellent effect upon character. In playing games boys learn physical courage, honour, self-reliance, and a certain amount of public spirit. They also learn to obey the law. Mr. Dowding¹ gives a delicious example from a small boys' game: "Please, Sir, need I go out? The umpire called wide and then gave me out leg before," which must be familiar to all who have played village cricket. I do not think many cricketers would be found among passive resisters. They would rather say with the Archbishop of Canterbury that our first duty is to obey the law and then to get it altered if necessary.

I think it is a pity that so many prizes and cups are given and that such a premium is put on skill in games. It rather destroys their natural character and tends to make boys think that games are better than learning and that the morality of games is the highest they need aim at. But parents are more to be blamed for this than boys and after all it is a small defect compared to the immense good they do. I really do not think I need say much more in their behalf. Both France and Germany have recognised their importance and are beginning to copy our system by introducing them.

They have, of course, some defects. I have already said that they do not develop all parts of the body alike. It is sometimes said that they are dangerous. But I believe this is entirely untrue so far as boys are concerned. I have seen a boy break his leg at football, but far more accidents happen when boys are not playing games than when they are. I do not take an exaggerated view of their moral effect. It is quite possible to be a good player and a great blackguard. Indeed, I think Mr. Benson² is quite right in saying that the adulation which a very good player excites brings with it certain temptations and certain facilities for evil. But as he and everyone else allows, the greatest danger of all is loafing, and games are the best safeguard against loafing which schoolmasters possess.

One point more. Boys who are hard at work want recreation in the strict sense of the word, something to refresh them and to remove the fatigue of intellectual effort. A hard game is itself exhausting and does not make a boy immediately ready for another hour's work. But ten minutes fooling with a small football for boys, or with a skipping-rope or battledore and shuttlecock for girls, is nothing but refreshing and intervals of this sort of play ought always to be inserted between lessons. An hour is

¹ Being the opening address on a discussion on Physical Training in Schools, delivered on Feb. 15th, 1906, before the Medical Officers of Schools Association.

² Parliamentary Papers, Special Reports, 1900, vol. xxii., Part II, p. 343.

of the wounded in general and so to enable them to undergo expeditious transference to a hospital ship than it is to lose precious time over a surgical operation, even though from the point of view of the patient it may be highly desirable to perform one.

Every vessel engaged under Admiral Togo had a sufficient supply of suitable dressing materials. This most important detail was very efficiently carried out; at no time during the operations, even after the great battle of May 27th and 28th, 1905, when the Japanese had to provide for a large number of wounded Russians, was there any serious deficiency or inconvenience in this respect. Packets for first aid in the navy differ essentially from those used in the army because wounds received in sea fights are generally more extensive than those received on land. At first the packets issued to Admiral Togo's fleet were too small, being only about three and a half inches long by two and a quarter inches wide. After the battle of Feb. 9th, 1904, it was noted that two or three packets were frequently required for a single dressing. This led to great loss of time, more especially as the wounds in addition to being large were often multiple, so orders were given for the immediate manufacture of an improved supply. The new packet was prepared in a wonderfully short time and gave complete satisfaction. It is about four and a half inches square and contains sublimated gauze compresses wrapped in tough Japanese paper and further enveloped in a specially prepared material known as "shibukami."

In spite of the hardship and fatigue inseparable from active service the sanitary condition of Admiral Togo's command was satisfactory to a remarkable extent, the sick-rate for the entire period having been lower than the average of the three preceding years.

In the Japanese navy the ordinary ration is as follows:—

Daily.			
Biscuit	6 ounces.	Dry vegetables	3 ounces.
Or bread	8 "	Or fresh	15 "
Rice	12 "	Fish, dry or preserved	5 "
Barley flour	5 "	Tea	4 drachm.
Preserved meat	6 "	Parched barley	1 "
Or fresh	7 "	Sugar	6 "
Weekly.			
Peas or haricots	2½ ounces.	Vinegar	½ ounce.
Wheat flour	2 "	Oil of sesame	1 drachm.
Sugar	3½ "	Salt	½ ounces.
Soy	3 "	Suet	1 "
Additional for Supper.			
Biscuit	4 ounces.	Tea	4 drachm.
Or bread	5 "	Sugar	4 "

During the war the above items were increased by one-fifth, all, that is, except the rice, of which the allowance continued to be 12 ounces. The fleet was provisioned by two ships specially allocated for this service. Each ship was fitted with refrigerating appliances and cold storage. They visited the mainland alternately and also drew supplies from transports. Never at any time, even during the season of fogs, had the sailors to put up with short commons, though occasionally in detached cruisers the fresh ingredients were lacking. The water-supply was excellent and ample, in fact abundant, sufficing not merely for drinking and culinary purposes but also for ablution. After a salt-water bath the men were always able to obtain a supplementary douche with fresh water. The surgeon-in-chief attributes the complete immunity of the fleet from the boils and blains usual so prevalent during warlike operations by sea or land to the copious water-supply.

Clothing suitable for extreme cold in winter and great heat in summer was provided for all ranks, officers as well as men. The results of this wise precaution are very evident. Never has the sequence of cause and effect been demonstrated with greater clearness. In spite of the rigour of the winter climate frost-bite was almost unknown and not a single man had to go to hospital on account of it. In the same way sunstroke was conspicuous by its absence during two hot seasons. No one suffered from it either on deck or in the stoke-hold. The stokers all drank fresh distilled water as a rule, but by way of a treat they were allowed now and then to mix with it a little arrowroot and sugar.

Two hospital ships, named respectively *Kobe-Maru* and *Saikyo-Maru*, were attached to Admiral Togo's fleet, each making up about 163 beds. It was thought best to have two

ships of moderate size (about 3000 tons) rather than one of large dimensions. Sick and wounded men were transferred in steam launches, the ordinary hospital cot being utilised for the journey. In the opinion of Dr. Alverno there was room here for improvement, a hammock being by no means a good appliance in the circumstances. Judging by the results, however, the system of removal adopted by the Japanese undoubtedly succeeded very well.

But perhaps the most remarkable thing in this wonderful war was the rareness of infectious disease. Typhoid fever and dysentery alone occurred and in neither case to an alarming extent. Before the war broke out there were some sporadic cases of typhoid fever in the fleet and afterwards a similar condition of things prevailed. At no time were there more than three or four men under treatment for the disease in any of the war vessels. In all there were 241 cases, which gives an annual sick-rate of 7·2 per 1000 of strength. The dysentery cases numbered 151 in all. They took place for the most part during the months of August and September, 1904, in the vessels blockading Port Arthur. The propagation of this affection is said to have been due to the swarms of flies with which the vessels were infested.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Feb. 8th, Mr. JOHN TWEDDY, the President, being in the chair.

A report was read from the court of examiners respecting 93 candidates found qualified for the diploma of Member and it was resolved that diplomas of Membership should be issued to these candidates.

It was resolved that diplomas of the Licence in Dental Surgery should be issued to three candidates found qualified. It was resolved that diplomas in Public Health should be issued, jointly with the Royal College of Physicians of London, to 18 candidates found qualified.

It was resolved that the Vicar of Hempstead should be informed that the College will contribute ten guineas towards the rebuilding of the tower of Hempstead Church, where William Harvey is buried, provided that a sufficient sum for the purpose is raised.

Dr. J. Ward Cousins was reappointed as the representative of the College on the Central Midwives Board.

It was resolved to hold an afternoon reception in the Museum for the members of the British Dental Association on the occasion of the meeting in London in May next.

Professor HOWARD MARSH gave notice of the following motion for the next meeting of the Council:—

That the time has come for reconsidering the question of the admission of women to the examinations of the Conjoint Board.

MEDICINE AND THE LAW.

Certification of the Cause of Death.

At a recent inquest at Bermondsey it was alleged that the deceased had been placed in his coffin before life was actually extinct and an attempt was made to fix the responsibility for this upon the medical attendant of the deceased because he had given a certificate of the cause of death without inspecting the body. The evidence as to the continuance of life fell far short of proving this to have been the fact and was given by a witness related to the deceased who was stated to have made similar allegations upon another like occasion. As a matter of fact, however, Mr. George Barton of Wanstead, the medical practitioner who attended the deceased, had seen him last when he was at the point of death and before quitting the house had asked a friend of the wife to prepare her for what he knew must inevitably ensue. He was afterwards informed, as is perfectly usual, that the deceased was dead, and granted in the prescribed manner a certificate of the cause of death. The story of the female witness already mentioned as to what she believed that she observed subsequently to this was the cause of an inquest being held and was also responsible for a rider added by the jury to their verdict, apparently with the acquiescence of the coroner, to the effect that Mr. Barton ought to have inspected the dead body before certifying.

gymnasium and no physical drill; when we were not playing games we could loaf without let or hindrance. But things are very different now. My house physician, Dr. J. G. Slade, who is an old Wykehamist, tells me that in his house boys had to keep a regular record of their exercise. If they did not take enough in games they had to make it up in "runs." This shows the advance that has been made in well-organised and progressive schools.

4. *Military drill (by which is meant movements necessary for war) and rifle practice.*—These we advocate for all schoolboys after the age of 16 years as a preparation for the adult military training that we wish to make universal. I do not think that it has any special merit different from other exercises in developing the body, but shooting is good training for the eye and is interesting in itself. I think myself that we do not teach boys citizenship half enough and that military drill gives them a sense that they have a duty to the country which is not completed by the payment of rates and taxes.

Having thus said what each form of training can effect let me put it another way and say what I should give a boy or girl so long as I had to educate him or her. My fellow parents will agree with me that after the child reaches a certain age it is the parents who get the education. Up to six or seven years childish games are all they want, except that they should be taught to breathe properly. From seven to 14 they ought to have all the organised games they can with children of their own size and regular systematic physical drill for 20 minutes a day at first, gradually increased to nearly an hour by the time they reach 14, and monkey-house work as part of their play. At 14 add gymnastics under proper instruction. I should not carry these to any great length unless a boy chose it for himself. At 16 I should give him a course of Sandow, and when he has learnt the system should encourage him to spend ten minutes over it morning and evening. And at the same age I should teach him the use of the rifle. But games always and throughout. The same for girls, except that I should let them play hockey instead of football. But I would make this difference between physical drill and games. I would compel every child, after medical examination, which should be universal when compulsion is in force, to go through the physical lessons and I would compel every boy to play games who could not show a reason against it. For the few boys who have strong interests in other directions, such as natural history or workshop work, I would always reserve the power of dispensation. The great feature of games is pleasure, and when a boy does not get the pleasure and will take healthy exercise elsewhere I would let him follow his bent.

Education and the War Office are the two things about which we are all agreed. We all think that they are as bad as they can be and that we could put them to rights if we had a proper opportunity. This much I think we ought to do. We ought to impress upon education authorities the folly of overloading the intellectual and undervaluing the physical side of education, to do all that lies in our power to get proper playgrounds and proper play for poor children,¹² and to bring before the elementary, public, and preparatory schools the necessity of supplementing games by regular physical drill.

JAPANESE NAVAL SURGERY.

THE following is an abstract of a communication recently made to the Association of Military Surgeons of the United States by Surgeon-in-Chief Suzuki of the Japanese navy, adapted from the French of Dr. Y. Alvergne in the *Archives de Médecine et de Pharmacie Militaires* for December, 1905.

In February, 1904, before Admiral Togo's fleet left Sasebo, the principal medical officer, Surgeon-in-Chief Suzuki, gave orders to all the medical officers serving under him that the aseptic treatment of wounds was to be made the rule. Conservative surgery was to be adopted as far as practicable; no amputations that could reasonably be postponed were to be performed on board ship and all men whose injuries involved withdrawal from their duty were to be transferred to hospitals ashore as rapidly as possible in

the vessels that were specially detailed for that purpose. In spite of the difficulty, almost amounting to impossibility, of applying strict asepsis during a naval engagement, that ideal was continually before the eyes of the Japanese surgeons. They strove incessantly, if not to attain, at least to approach within measurable distance of their object. During the period from February, 1904, to August, 1905, while active operations were in progress, 1891 deaths took place in Admiral Togo's fleet, of which the average strength was 23,506 men of all ranks; but of these fatalities no fewer than 1445 were due to the sinking of vessels by submarine mines. The wounded amounted to 1791, of whom 117, or 6.5 per cent., subsequently died, bringing the total mortality up to 2008, which gives a death-rate on the average strength of 8.5 per cent. The following table shows the numbers killed and wounded in the various engagements, together with the results in the latter category:—

Date of engagement.	Killed in action.	Wounded.	Total.	Disposal of wounded.			
				Died.	Recovered.	Invalided.	Remaining.
Feb. 9th, 1904... ..	3	69	72	6	59	3	1
August 10th, 1904... ..	65	161	226	6	133	17	5
" 14th, " " " " "	36	95	132	10	80	3	3
Port Arthur, June 26th } 1904, to Dec. 31st, 1904 }	30	313	343	27	258	20	8
May 27th, 1905... ..	88	611	699	29	470	—	112
Minor engagements and } submarine mines* " " }	1609	541	2210	39	470	39	2
Total... ..	1891	1791	3682	117	1470	73	131

* 1445 lives were lost through the sinking of vessels presumably in consequence of injury inflicted by submarine mines.

The system of asepsis as now generally practised was adopted by all Admiral Togo's medical officers; steam sterilisation of dressing materials which were then stored in metallic boxes; disinfection of instruments in boiling water, to which some carbonate of soda had been added; disinfection of the surgeon's hands and also of the patient's skin in the vicinity of his wound by cleansing with soap and brush in sterilised water, followed by washing with a solution of corrosive sublimate, and finally by rinsing with some more sterilised water. Whenever it was not possible to carry out this procedure in its entirety the parts adjacent to the wound were bathed with absolute alcohol.

What ought to be the surgeon's duty during a naval engagement? When should it begin? How soon is it possible for it to begin? Dealing with this important, but still undetermined, question in the light of his recent experience Surgeon-in-Chief Suzuki gives it as his opinion that although the surgeon may not be completely stationary during the first phase of a combat—that is to say, whilst the firing still continues—his opportunities for profitable intervention will not amount to much more than the arrest of hemorrhage, the dressing of wounds of the soft parts, and the application of a few simple appliances. And even such assistance can only be rendered effectively in the case of wounded men who may be able to make their way to the sick bay unassisted or who can find comrades able and willing to carry them there. Surgery, properly so-called, can only be attempted when the second phase has commenced. As soon as the firing is over the surgeon can examine the serious cases and extract fragments of shells that are easily removable, as well as pieces of clothing or other foreign bodies that have been forced into the wound. If possible he should close wounds that gape by means of sutures, for experience shows that obturation often exercises a happy influence upon their progress and tends to bring about union by first intention. In complicated fractures the medical officer should content himself with the abstraction of loose pieces of bone and leave *in situ* all that would need force for their removal. But even during the comparative freedom and quiet of the second phase the surgeon must confine himself strictly to work that cannot be postponed; he must not attempt any operations. It is far better to minister to the pressing needs

¹² If the wicked man left a fund to provide battle-dresses and shuttle-cocks and small footballs for elementary schools I should let him off more purgatory than I should for most other charitable bequests.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1906.

(Specially compiled for THE LANCET.)

CITIES AND DISTRICTS.		Total population in the middle of 1906.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths of infants under one year to 1000 births.				
			Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Pneumonia.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhoea.		Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.
LONDON.		4,721,217	1	1699	757	1	119	1	31	440	—	3055	6.7	—	230	53	72	166	—	15	—	60	697	1.3	7221	15.0	113
West Districts.																											
Buckingham		148,913	—	19	10	—	4	—	1	8	—	50	3.6	—	—	2	1	3	—	1	—	4	12	0.8	132	12.7	85
Birmingham		180,112	—	22	14	—	7	—	4	11	—	68	3.3	—	—	—	3	4	—	—	—	2	10	0.6	234	13.6	167
Bristol		120,679	—	32	19	—	2	—	2	7	—	63	5.4	—	—	—	4	—	—	—	—	2	17	1.6	177	15.3	123
Birmingham		161,643	—	31	16	—	4	—	3	15	—	108	7.0	—	—	6	2	3	—	2	—	1	17	1.1	213	13.7	110
Birmingham		74,672	—	14	18	—	—	—	2	6	—	39	5.4	—	—	—	—	—	—	—	—	2	3	0.4	131	16.3	163
Chichester		173,565	—	51	23	—	4	—	1	14	—	93	6.6	—	—	1	1	2	—	—	—	1	7	0.4	253	15.2	155
North Districts.																											
St. Marylebone		128,580	—	20	10	—	6	—	1	12	—	48	3.9	—	—	1	2	—	3	—	—	1	7	0.6	175	14.0	75
Leamington		80,033	—	21	8	—	—	—	—	4	—	35	3.8	—	—	—	1	—	—	—	—	—	1	0.1	59	11.5	55
St. Pancras		236,450	—	92	21	—	6	—	2	22	—	145	6.4	—	—	6	3	1	12	—	1	—	23	1.0	400	17.6	119
Islington		341,087	—	132	39	—	9	—	2	31	—	214	6.5	—	—	30	5	1	9	—	—	3	48	1.6	520	16.3	120
Stoke Newington		53,217	—	11	4	—	—	—	—	3	—	19	3.7	—	—	—	—	1	—	—	—	—	1	0.2	74	12.5	74
Hackney		230,721	—	118	38	—	9	—	2	29	—	186	8.9	—	—	—	3	—	6	—	—	2	12	0.5	316	14.3	163
Central Districts.																											
Isle of Wight		55,806	—	11	2	—	—	—	—	7	—	20	3.7	—	—	—	—	1	—	—	—	—	2	0.4	95	17.8	82
Pinner		97,465	—	41	10	—	3	—	—	9	—	63	6.7	—	—	4	1	2	4	—	—	2	14	1.6	176	19.0	79
City of London		21,367	—	8	1	—	—	—	—	1	—	10	4.0	—	—	—	2	—	1	—	—	—	3	1.5	35	17.1	179
East Districts.																											
Shoreditch		118,163	—	59	11	—	2	—	—	9	—	69	6.2	—	—	1	2	1	5	—	—	2	13	1.2	227	20.4	153
Bethnal Green		130,679	—	42	20	—	2	—	—	16	—	95	7.9	—	—	8	4	2	8	—	—	2	26	2.1	215	19.4	144
Stepney		397,170	—	92	46	—	—	—	—	27	—	181	6.1	—	—	27	4	10	24	—	—	5	71	2.4	547	18.6	166
Poplar		170,673	—	93	25	—	6	—	—	25	—	161	9.2	—	—	5	7	2	5	—	—	5	24	1.5	272	16.6	168
South Districts.																											
Southwark		220,143	—	83	35	—	8	—	1	40	—	173	8.6	—	—	19	2	6	2	—	—	2	31	1.6	373	18.1	128
Barnet		113,119	—	113	19	—	3	—	—	17	—	153	12.4	—	—	6	1	4	10	—	—	2	22	1.8	247	20.0	151
Lambeth		315,774	—	126	31	—	4	—	2	26	—	189	6.2	—	—	27	5	4	11	—	—	3	51	1.7	561	17.3	167
Battersea		170,622	—	78	22	—	2	—	—	17	—	125	7.3	—	—	10	1	2	6	—	—	—	—	—	—	—	—
Wandsworth		273,301	—	111	50	—	11	—	—	13	—	191	7.3	—	—	17	1	7	6	—	—	3	26	1.4	338	12.9	160
Camberwell		274,132	—	91	32	—	7	—	3	37	—	178	6.3	—	—	35	1	10	7	—	—	3	36	2.1	453	17.2	162
Deptford		116,705	—	45	18	—	3	—	1	16	—	63	8.3	—	—	11	3	1	10	—	—	1	26	2.3	118	17.0	168
Greenwich		105,350	—	30	62	—	7	—	2	6	—	105	10.4	—	—	6	2	4	8	—	—	1	21	2.1	131	13.0	123
Lewisham		148,493	—	47	21	—	1	—	1	7	—	78	5.5	—	—	0	2	1	1	—	—	1	9	0.6	169	11.9	115
Woolwich		127,545	—	12	41	—	4	—	1	9	—	110	9.0	—	—	2	—	3	2	—	—	2	10	0.8	182	14.9	116
Port of London		—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Blame of this kind made public by sensational reports in newspapers inflicts considerable hardship upon medical men, is highly unjust, and is based upon a misapprehension of the legal position. Every medical man is familiar with the form of death certificate issued to him officially (under the Registration of Births and Deaths Act, 1874), which does not in any way make it obligatory for him to view the dead body, but on the contrary provides for his not having done so. It is a certificate of the cause of death, not of the fact that it has taken place, and if the relatives desire that the medical man should see the deceased before granting it, it is for them to summon him to do so. If they are content that he should not do so, the responsibility, if any, rests with them. The law, however, only requires that they should inform the registrar that the death has taken place and deliver to him a certificate of the cause of it, which they are to obtain from a medical practitioner should there be one who can furnish it. Mr. Burton therefore acted absolutely correctly and the censure conveyed in the rider of the jury at the inquest referred to was wholly undeserved.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Feb. 6th, Dr. JOHN PLAYFAIR, the President, being in the chair.

Dr. George Freeland Barbour Simpson, Dr. Charles Mowbray Pearson, and Dr. Edwin Matthew were introduced and took their seats as Fellows of the College.

Dr. Andrew Balfour (Khartoum) and Dr. John Dixon Comrie (Edinburgh) were admitted by ballot to the Fellowship of the College.

Dr. William Leslie Lyall (Edinburgh) and Mr. Sorab Kaikhoshru Engineer (Portobello) were admitted by ballot to the Membership of the College, after examination.

The REGISTRAR reported that since the last quarterly meeting 26 persons had obtained the Licence of the College by examination.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8603 births and 4711 deaths were registered during the week ending Feb. 10th. The annual rate of mortality in these towns, which had been 15.8, 15.9, and 15.5 per 1000 in the three preceding weeks, was again 15.5 per 1000 last week. In London the death-rate was 14.9 per 1000, while it averaged 15.9 in the 75 other large towns. The lowest death-rates in these towns were 8.4 in Willeeden, 8.6 in Walthamstow, 9.2 in East Ham and in Reading, 9.3 in Leyton and in Hastings, and 9.6 in Hornsey; the highest rates were 20.0 in Rhondda, 20.5 in Coventry, 20.8 in Great Yarmouth, in Plymouth, and in Burnley, 21.1 in Warrington, 21.2 in Liverpool, 22.8 in Preston, and 24.2 in Merthyr Tydfil. The 4711 deaths in these towns last week included 399 which were referred to the principal infectious diseases, against 369, 385, and 366 in the three preceding weeks; of these 399 deaths, 130 resulted from whooping-cough, 76 from diphtheria, 69 from measles, 58 from diarrhoea, 44 from scarlet fever, and 22 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Northampton, Great Yarmouth, Burton-on-Trent, Coventry, Wigan, Bury, and Rotherham; while they caused the highest death-rates in Croydon, Plymouth, Wolverhampton, Leicester, Rochdale, Burnley, Preston, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Croydon, Tottenham, Preston, Leeds, and York; from diphtheria in Croydon, Reading, Hull, Middlesbrough, and Merthyr Tydfil; from whooping-cough in Plymouth, Birmingham, King's Norton, Aston Manor, Leicester, Warrington, Rochdale, Burnley, and Gateshead; and from diarrhoea in Rochdale. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the 76 towns, and no cases of this disease were under treatment last week in any of the Metropolitan Asylums Hospitals. The number of scarlet fever cases in these

hospitals and in the London Fever Hospital, which had been 3066, 2983, and 2912 on the three preceding Saturdays, had further fallen to 2839 on Saturday last, Feb. 10th; 283 new cases were admitted during the week, against 328, 322, and 319 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 299, 293, and 313 in the three preceding weeks, declined again to 278 last week, and were 98 below the corrected average number in the corresponding periods of the four preceding years. The causes of 46, or 1.0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Manchester, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and 49 other smaller towns; the largest proportions of uncertified deaths were registered in Burton-on-Trent, Birmingham, Nottingham, Liverpool, St. Helens, Warrington, Blackburn, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18.2, 19.6, and 18.5 per 1000 in the three preceding weeks, rose again to 16.8 per 1000 during the week ending Feb. 10th, and was 1.3 per 1000 in excess of the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 14.5 in Leith and 15.0 in Paisley, to 20.6 in Dundee and 21.1 in Perth. The 577 deaths in these towns last week included 18 which were referred to measles, 15 to diarrhoea, four to whooping-cough, four to "fever," three to scarlet fever, and three to diphtheria. In all, 47 deaths resulted from these principal infectious diseases last week, against 53, 69, and 47 in the three preceding weeks. These 47 deaths were equal to an annual rate of 1.4 per 1000, which was slightly above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 24, 31, and 18 in the three preceding weeks, were again 18 last week, and included 14 in Glasgow and two in Dundee. The deaths from diarrhoea, which had been 19, 13, and 18 in the three preceding weeks, declined again last week to 15, of which six occurred in Glasgow, five in Dundee, and three in Edinburgh. The fatal cases of whooping-cough, which had been seven and six in the two preceding weeks, further declined to four last week, and included three in Glasgow. The deaths referred to different forms of "fever," which had been four and one in the two preceding weeks, rose again last week to four, of which two were registered in Glasgow. The fatal cases of scarlet fever, which had been three, two, and none in the three preceding weeks, rose again to three last week, and all occurred in Glasgow. The deaths from diphtheria, which had been five, 12, and four in the three preceding weeks, further declined last week to three, of which two were registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 114, 110, and 113 in the three preceding weeks, declined again to 108, and were 22 below the number in the corresponding period of last year. The causes of 23, or 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20.1, 21.2, and 24.4 per 1000 in the three preceding weeks, declined again to 20.5 per 1000 during the week ending Feb. 10th. During the past four weeks the death-rate has averaged 21.6 per 1000, the rates during the same period being 15.1 in London and 17.9 in Edinburgh. The 149 deaths of persons belonging to Dublin registered during the week under notice were 28 below the number in the preceding week and included one death from "fever," but none from small-pox, measles, scarlet fever, diphtheria, whooping-cough, or diarrhoea; in each of the two preceding weeks there were five deaths from these principal infectious diseases. The mortality from "fever" in Dublin last week was equal to a rate of 0.1 per 1000, the death-rates during the same period from the principal infectious diseases being 1.2 in London and 0.6 in Edinburgh. The 149 deaths in Dublin last week included 23 of children under one year of age and 44 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were considerably below the respective numbers recorded in the preceding week. Nine inquest cases and five deaths from violence

LEAVE ON MEDICAL CERTIFICATE.

The following alteration in the rules governing leave on medical certificate has been made:—To be substituted for the second sentence of paragraph 1915: "When an officer has been examined by a medical board (whether at home or abroad) the original proceedings must, in all cases, be forwarded to the War Office without delay; in the event of leave having been granted, the period and date of commencement of leave should be notified."

THE CHANNEL FLEET AND THE NEED FOR HOSPITAL ACCOMMODATION.

The Channel Fleet is now organised on a large scale and is manned probably by some 12,000 men. This being so it is no matter for surprise that medical opinion should consider the lack of hospital provision a serious error in administration. For the sick of all this large body of men there is no special accommodation; they are treated as best they can be in the individual vessels composing the fleet. The hospital ship *Maine* is understood to have been "earmarked" for the Mediterranean Fleet and analogous provision should now be made for the sick sailors in the Channel Fleet. There are many cases of illness which cannot possibly be treated adequately, and in accordance with modern medical and surgical knowledge, on board the vessels on which they occur. Extemporised provision for such cases must often be made in place of that finished treatment which our sailors have a right to expect and which the authorities, as is well known, wish to supply. The sick man on board his ship in the midst of routine duties, besides not being in a favourable situation for treatment, must often interfere with discipline. Drills may be dispensed with out of consideration for seriously ill, perhaps dying, men—an important matter as regards the efficiency of the personnel of a ship. Or a vessel may be compelled to put to sea with a dying man on board—indeed, such sad occurrences cannot be infrequent. We should much like to hear that the Channel Fleet has been treated like the Mediterranean Fleet and has been supplied with a hospital ship, and the sooner this happens the better, for the naval manœuvres must interfere with, if not prevent, the sending home of men who ought at once to be invalided.

THE MILITARY FAMILIES HOSPITAL, DEVONPORT.

The Military Families Hospital, Devonport, is restricted to the wives and children "on" or "off" the strength of soldiers and marines in the Plymouth garrison. During 1905 146 women and 39 children were admitted as in-patients, the out-patients' attendances numbered 4421, and 1581 visits were made to patients' homes. The institution receives a Government grant and in addition subscriptions have been received from the "Marines," "Somersetts," "Devons," &c. Numerous gifts in kind were also sent. The subscriptions are used to pay part of the hospital expenses of women and children not on the "married roll," to provide special surgical appliances and other extras for patients, and also to decorate and to brighten the wards.

A GERMAN SANATORIUM FOR OFFICERS' FAMILIES.

An authorisation to establish a sanatorium for the families of officers of the German army having been given to a private syndicate of Frankfurt-on-the-Main by the Minister of Agriculture, Domains, and Forests, the Château of Idstein, situated among the Taunus mountains in Hesse-Nassau, was opened for patients in September last. In accordance with a circular issued by the Minister of War in August, 1905, this establishment, which is under the control of the general officer commanding the 18th Army Corps, is superintended by a military medical officer who has been relieved from duty for the purpose. The wives and children of necessitous officers on the effective list are eligible for admission provided they live under the same roof as the husbands or fathers and can produce a medical certificate attesting their fitness for treatment in the sanatorium. As a rule the course of treatment is limited to a month, but in special cases the period may be prolonged on the recommendation of the superintendent. When infants and children are admitted their mothers cannot be accommodated unless they, too, are eligible as patients. All medical treatment is free, but inmates are required to defray charges for lodging, food, and linen, as well as their travelling expenses.

HOSPITAL ATTENDANTS IN THE RUSSIAN ARMY.

In Russian military hospitals the subordinate duty is performed by a body of men who are designated *feldschers*.

They receive a certain amount of medical training in schools organised for the purpose at St. Petersburg, Kiev, Moscow, Tiflis, Novotcherkassk, and Irkutsk, and to a limited extent are allowed to replace medical officers when the services of the latter are not available. Such is the theory, but practically most of the soldiers composing Russia's vast army are dependent on *feldschers* for medical and surgical aid. Notwithstanding the disturbed state of the country a new school for *feldschers* has recently been opened at Kherson, the number of pupils to be instructed being fixed at 200. The authority for the establishment of this institution consists in a *prilaz*, or Order of Council, dated Jan. 4th (Old Style), 1905.

Correspondence.

"Andi alteram partem."

THE UNION OF LONDON MEDICAL SOCIETIES.

To the Editors of THE LANCET.

SIRS,—The organising committee of the above have sent 5000 reply postcards to members of the various societies requesting answers to certain questions. This course was adopted for the purpose of ascertaining the probable membership of the proposed new society. The replies have been most satisfactory, nearly 1000 individuals having stated their intention of joining the new society as Fellows at an annual subscription of £3 3s. So far, however, we have received less than 2000 answers.

In order to estimate the financial position of the proposed new society it is important that we should have as complete an idea as possible of the numbers of members of existing societies who are likely to join the new society as members or Fellows. We should, therefore, be much obliged if you would allow us to appeal through your columns for an early reply to the appended questions on the part of those who have not yet answered.

We are, Sirs, yours faithfully,

ARTHUR LATHAM,

HERBERT S. PENDLEBURY,

Honorary Secretaries.

Brook-street, W., Feb. 10th, 1906.

[ENCLOSURE.]

Union of Medical Societies.

Are you willing (1) to become a Fellow of the proposed new society with the full use of the general library and the right to attend all the sections at a subscription of £3 3s. per annum; or (2) to become a member of a section with the use of the sectional library and of the general reading room at a subscription of £1 1s. per annum; or (3) to become a member of a section as above and to join other sections at a subscription of 10s. 6d. per annum for each additional section; or (4) to become a member of one or more sections as above and in addition to pay a subscription of £1 1s. per annum for the full use of the general library?

HYGIENE OF COTTAGES IN AGRICULTURAL DISTRICTS.

To the Editors of THE LANCET.

SIRS,—May I, speaking from a long and practical experience as to the conditions existing in rural districts, bear witness to the correctness and importance of the letter by a "Suffolk Poor-law Medical Officer" in THE LANCET of Feb. 10th, p. 404. It would not be fitting to enter into details as to some of the horrible cases of illegitimacy which occur in consequence not so much of actual overcrowding as of the occupation of the same room by widowed father and daughter, grown-up sister and brother, &c. The overcrowding in earlier years prepares the way for this and effectually rubs off in the young child all that innate modesty and self-respect which under proper conditions should in after years be the safeguard of character. I do not think it would be far wrong to say that, as a rule, in the villages of England not more than one cottage out of every three has more than two bedrooms, and in these two bedrooms we almost invariably find the parents and one or two younger children in one room and the growing-up girls and boys in the other. Sometimes when the family is grown up the girls sleep in the parents' room and the boys in the other. The pitch darkness of the village streets in winter evenings is another evil and wise mothers will not allow their daughters to travel

were registered; and 62, or more than two-fifths, of the deaths occurred in public institutions. The causes of seven, or nearly 5 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING JANUARY, 1906.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·7 per 1000 of the population, estimated at 4,721,217 persons in the middle of the year. In the three preceding months the rates had been 10·0, 9·4, and 6·7 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, St. Marylebone, Hampstead, Stoke Newington, and Holborn; and the highest rates in Hackney, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. The prevalence of scarlet fever last month showed a slight decline from that recorded in December; among the various metropolitan boroughs this disease was proportionally most prevalent in Hackney, Finsbury, Poplar, Southwark, Bermondsey, Battersea, and Deptford. The Metropolitan Asylums hospitals contained 2866 scarlet fever patients at the end of last month, against 4187, 3976, and 3410 at the end of the three preceding months; the weekly admissions averaged 296, against 509, 449, and 318 in the three preceding months. Diphtheria was much more prevalent than in the preceding month; the greatest proportional prevalence of this disease occurred in Fulham, Chelsea, Bethnal Green, Greenwich, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums hospitals, which had been 796, 723, and 701 at the end of the three preceding months, had risen again to 867 at the end of last month; the weekly admissions averaged 121, against 123, 100, and 101 in the three preceding months. The prevalence of enteric fever showed no variation from that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Kensington, St. Marylebone, Hackney, Southwark, Camberwell, and Greenwich. There were 95 enteric fever patients in the Metropolitan Asylums hospitals at the end of last month, against 157, 115, and 78 at the end of the three preceding months; the weekly admissions averaged 16, against 26, 17, and 13 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. The 31 cases of puerperal fever notified during the month included four in Kensington, three in Fulham, three in Camberwell, and two each in Hammersmith, Chelsea, St. Pancras, Islington, Hackney, Lambeth, and Lewisham.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending Feb. 3rd 7221 deaths of persons belonging to London were registered, equal to an annual rate of 16·0 per 1000; in the three preceding months the rates had been 14·0, 17·0, and 17·6 per 1000. The death-rates last month ranged from 11·5 in Hampstead, 11·9 in Lewisham, 12·5 in Stoke Newington, 12·7 in Paddington, and 12·9 in Wandsworth, to 18·3 in Chelsea, 18·5 in Stepney, 19·0 in Finsbury, 19·4 in Bethnal Green, 20·0 in Bermondsey, and 20·4 in Shoreditch. The 7221 deaths from all causes in London last month included 597 which were referred to the principal infectious diseases; of these, 240 resulted from measles, 54 from scarlet fever, 72 from diphtheria, 156 from whooping-cough, 15 from enteric fever, and 60 from diarrhoea. The lowest death-rates from these diseases were recorded in Chelsea, City of Westminster, Hampstead, Stoke Newington, Hackney, and Holborn; and the highest rates in Bethnal Green, Stepney, Bermondsey, Camberwell, Deptford, and Greenwich. The 240 deaths from measles were 46 above the average number in the corresponding periods of the four preceding years; this disease was proportionally most fatal in Islington, Finsbury, Stepney, Southwark, Lambeth, Camberwell, and Deptford. The 54 fatal cases of scarlet fever were slightly above the corrected average; among the various metropolitan boroughs this disease showed the greatest proportional mortality in Fulham, the City of

London, Shoreditch, Bethnal Green, Poplar, Deptford, and Greenwich. The deaths from diphtheria numbered 72 last month, against an average of 90 in the corresponding periods of the four preceding years; this disease was proportionally most fatal in Hammersmith, Stepney, Bermondsey, Wandsworth, Camberwell, and Greenwich. The 156 fatal cases of whooping-cough showed a decline of 34 from the corrected average number; among the various metropolitan boroughs the highest death-rates from this disease were recorded in St. Pancras, Bethnal Green, Stepney, Bermondsey, Deptford, and Greenwich. The 15 deaths from enteric fever were 19 below the average number in the corresponding periods of the four preceding years; of these 15 deaths two belonged to Fulham and two to Wandsworth. The 60 fatal cases of diarrhoea were 19 below the corrected average; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Chelsea, Shoreditch, Poplar, and Battersea. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was nearly 13 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 112 per 1000. The lowest rates of infant mortality were recorded in Paddington, St. Marylebone, Hampstead, Stoke Newington, Holborn, and Finsbury; and the highest rates in Hammersmith, City of Westminster, Islington, City of London, Shoreditch, Bethnal Green, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: O. W. Sharples to the *Clyde*; J. Bradley to the *Essex*, on recommissioning. Staff Surgeons: W. S. H. Sequella to the *Unicorn*, temporary. Surgeons: A. J. Wernet to Plymouth Hospital; W. J. Still to the *Cambridge*; L. O. E. Murphy to the *Duke of Edinburgh*; C. A. G. Phipps to the *Virid*; S. H. Vickery to the *Thistle*; L. A. Baiss to the *Tamar*; G. Nunn to the *Darham*; H. Woods to the *Virid*; and D. H. Vickery and W. L. Hawkins to the *Pembroke* for disposal.

The undermentioned Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Bernard Ley (dated Nov. 14th, 1902); Elystan Glodrydd Evelyn O'Leary (dated May 13th, 1904); Louis Edward Dartnell (dated Nov. 10th, 1904); Edward Dominic Joseph O'Malley; Richard Foster Clark (dated May 25th, 1905); and Reginald Waterfield (dated Nov. 29th, 1905).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Arthur M. Davies to be Professor of Hygiene, vice Lieutenant-Colonel R. H. Firth, whose tenure of that appointment has expired (dated Feb. 1st, 1906). Captain William S. Harrison to be Assistant Professor of Pathology, vice Captain D. Harvey, whose tenure of that appointment has expired (dated Feb. 1st, 1906).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors are placed on retired pay (dated Jan. 30th, 1906):—John G. Black, Walter P. Squire, Stanley J. W. Hayman, and Julian P. S. Hayes. Lieutenant Richard J. C. Thompson, from the Seconded List, to be Lieutenant (dated Jan. 31st, 1906).

VOLUNTEER CORPS.

Royal Engineers (Volunteers): 1st Durham: David Henderson Weir to be Surgeon-Lieutenant (dated Feb. 10th, 1906).

Rifle: 1st Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant-Colonel W. Sneddon is granted the honorary rank of Surgeon-Colonel (dated Feb. 10th, 1906); Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel W. Sneddon resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Feb. 10th, 1906). 2nd Volunteer Battalion the Durham Light Infantry: Surgeon-Captain G. Stephen resigns his commission (dated Feb. 10th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Welsh Bearer Company: Henry Thomas Samuel to be Lieutenant (dated Feb. 10th, 1906).

less cost. I think it will be admitted that even for an ordinary case 2000 units are practically useless, but still it is sent out in that strength at a price of 2s. 6d. It follows that if one has a case of diphtheria of any degree of severity it is necessary to inject from 20s. to 30s. worth of antitoxin in order to hope for success. This might be a matter of no moment to hospital authorities but to the general practitioner who has no hope in many instances of being paid it is of some importance. I trust others will take this matter up in order that the strength of antitoxin will be increased and the price reduced.—I am, Sirs, yours faithfully,
R. ENNETT, M.D. Durh.
Portsmouth, Feb. 5th, 1905.

HEMPSTEAD CHURCH, ESSEX: THE BURIAL PLACE OF WILLIAM HARVEY.

To the Editors of THE LANCET.

SIRS.—The church tower of Hempstead, Essex, a small village of some 400 inhabitants, fell down in 1832, and the stones still lie in disfiguring heaps in the churchyard. The district is a purely agricultural one and it has hitherto been found impossible to raise locally an amount sufficient for its rebuilding. The parishioners deeply value their privilege of being the custodians of the mortal remains of Dr. William Harvey whose discovery of the circulation of the blood was mainly instrumental in raising the art of medicine and surgery to its present rank as a science. But their means being so small outside help is essential for rebuilding the tower of the church, which is estimated to cost £1500, and it has occurred to me as the newly appointed vicar of the parish that the members of the medical profession would feel it a privilege to contribute to restore to decency and order the structure in which rests the body of one to whom they owe so much.

I have communicated with the Royal College of Physicians of London and the Royal College of Surgeons of England and these bodies have recognised the justice of my appeal, the former by a contribution of 20 guineas and the latter by one of 10 guineas, provided a sufficient sum for the purpose is raised. May I ask you to use your influence in the matter and to open a subscription list in your journal, asking members of the medical profession at home and abroad to send contributions to Messrs. Barclay, Bankers, Saffron Walden, Hempstead Tower Fund, in honour and to the memory of such an illustrious member of their profession as Dr. William Harvey proved himself to be.

I am, Sirs, yours faithfully,
E. J. ROBERTS, Vicar.
Hempstead Vicarage, Saffron Walden, Feb. 12th, 1905.

The following sums have been already paid or promised:—

	£	s.	d.		£	s.	d.
In Messrs. Barclay's Bank	210	0	0	Royal College of Surgeons of England	10	10	0
Royal College of Physicians of London	21	0	0	Dr. D. H. Tuke	2	10	0

MEDICAL PRACTITIONERS AND THE NOTIFICATION OF INFECTIOUS DISEASES.

To the Editors of THE LANCET.

SIRS.—In your issue of Feb. 3rd you reported an action recently brought against Dr. Louis Stamm for alleged negligence in notifying a case of typhoid fever. In commenting upon the action you stated *inter alia* that the judge ordered the costs to be paid by the plaintiff on the highest scale "so that as far as possible Dr. Stamm will be indemnified for his necessary expenditure in resisting the claim against him." And, further, you stated "he," Dr. Stamm, "had to undergo all the anxiety and expense of preparing his defence."

May I be allowed somewhat to alter such statements by reporting that the case on behalf of Dr. Stamm was carried into court by the Medical Defence Union, and that no part of the expenses and costs incidental to such defence has had to be borne by the defendant, who most wisely had become, some years since, a subscriber to the Union. It is impossible, of course, for the Union to relieve any of its members whilst defending them from some of the anxiety due to such a position, but I think I may safely say that it is inaccurate to state that "all the anxiety" was undergone by the defendant, and certainly none of the expenses fell upon him. The fact that the defence was

raised successfully in this action by the Union was reported in the accounts of the case published in the newspapers, but it apparently escaped your editorial notice.

I am, Sirs, yours faithfully,
A. G. BATEMAN.

4, Trafalgar-square, W.O., Feb. 13th, 1905. General Secretary.

* * We did not know that Dr. Stamm's defence was undertaken by the Medical Defence Union. We congratulate Dr. Stamm on his foresight and once again the Union on its good work.—ED. L.

THE LONDON COUNTY COUNCILLORS IN PARIS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Paris, Feb. 10th.

WHEN the 82 members of the London County Council braved the stormy weather and embarked for Calais and Paris they undoubtedly thought that a great reception was awaiting them. This Sir Edwin Cornwall, speaking as chairman of the London County Council at the final banquet, frankly confessed; but, he added, "our expectations have been exceeded a thousand-fold." First of all, it is not usual for members of a municipality to be received with military honours. The Republican Guards, both the horse-guards and infantry, though now under the authority of the Minister of War, were originally a municipal guard and are still employed exclusively for maintaining order within the capital. Thus, when the members of the London County Council reached the Northern station at Paris they found a guard of honour protecting the approaches of the platform and a numerous escort of horse-guards to ride by the side of their carriages and to clear the road in front. Two military bands, one inside and the other outside the station, played the national anthems of the two countries as soon as the councillors arrived and they were, of course, met by their Parisian colleagues. The cavalry escort accompanied the councillors during the whole week and it was not merely the Paris municipality that rendered these honours; the Government also took an active part in the welcome. Not only were the councillors received by the Prime Minister and the Minister of Foreign Affairs, M. Rouvier, but, contrary to the usual custom, he delivered a speech to his visitors expressing his cordial sympathy with their mission. A few minutes previously the President of the Republic, M. Loubet, had made a similar departure from the usual custom, for he favoured his visitors with quite a lengthy address which of course was reproduced by the daily press. Then, finally, M. Dubief, Minister of the Interior, gave the London and Paris councillors a great reception and entertainment at his official residence.

That the representatives of municipal administrations should thus be honoured has, of course, an important political significance. Its meaning is obvious, but it is not the business of this journal to deal with purely political questions. In his speech of welcome Dr. Paul Brousse, President of the Paris Municipal Council, alluded to the many visits and exchanges of courtesies that had recently occurred between the two countries, including that of members of the medical profession on both sides of the Channel. Then he added: "At this very moment these two good neighbours are sitting side by side in the councils of Europe with this common object in view—the maintenance of peace."

Again, in another passage pronounced, be it observed, by a doctor of medicine, the President of the Paris Municipal Council said: "In the great town of Paris, of all our various municipal services I do not know one that can engender any sense of hatred in the minds of the citizens. On the contrary, all leads to concord; education, the measures of solidarity introduced in the schools, poor relief, public health, the creation of easy and agreeable means of transit—all these services are absolutely pacific in their purpose. Those who are successful workers in such pursuits must be admirably prepared to act as propagandists in favour of peace and liberty."

In the face of these remarks and after a week of really extraordinary demonstrations it would be mistaken modesty, leading to a misrepresentation of history, if the medical profession on both sides of the Channel failed to claim a share,

I am, Sirs, yours faithfully,

St. Neots, Feb. 10th, 1906.

I am, Sirs, yours faithfully,

HERBERT JONES.

Since writing that paper more than ten years ago I have had abundant opportunity of further observation and although I have had some very serious cases under treatment I have yet to meet one in which surgical interference was necessary nor have I one death to record. The emptying of the bowel and the removal of irritating matter are not the only effects of high-up injection, for when the bowel is distended the appendix is retracted and distended, and in this way the fluid injected has a chance to enter and remove sources of

I am, Sirs, yours faithfully,

Lindsay, Ontario, Canada, Jan. 20th, 1906.

SIRS.—The reading of the most excellent article on *Some Points in the Treatment of Heart Failure in Diphtheria* by Dr. Charles Bolton has led me to make an appeal to the makers of diphtheria antitoxin as to whether the time has not arrived when this valuable remedy for the treatment of so fatal a disease cannot be retailed to the profession at a

for the present site. The first instalment of £100,000 received from the corporation will be exhausted during the coming summer. Afterwards, until the present buildings are given up to the corporation, the cost of the new buildings will have to be defrayed by money borrowed at interest, which, of course, is costly. Moreover, it has to be borne in mind that when the new infirmary with its increased number of beds and the new receiving house with its separate administrative staff are occupied the annual expenditure will be much larger than at present. So far, income and expenditure have run fairly well together but unless the former, under the new conditions, is very considerably increased this smooth progression cannot be maintained. The question is whether the list of regular subscribers can be sufficiently enlarged. This is the day of high and increasing rates, of municipal expenditure on the grand scale, of municipal enterprises not always well considered and by many thought to be reckless and spendthrift. It is the day, moreover, when private living tends more and more towards self-indulgence and extravagance. This state of things is not favourable to a sympathetic consideration of the calls of charity and duty, and the future of our hospitals and dispensaries is, to those interested, a subject of grave anxiety. It is said that already there is a deficiency in the income of our local medical charities of £10,000 a year. It seems pretty clear, therefore, that their services to humanity will soon have to be curtailed seriously, or that those who have means must become more awake to the duty of giving help to those less fortunate than themselves.

Baby Farming.

In her last report Miss F. Zanetti, the inspector for the Chorlton union, says that the present Infant Life Protection Act is not efficacious. There is no restraint "on those who adopt a child for a larger sum than £20, and none on those who nurse one child at a time." It has been discovered that during the last year baby-farming has been unusually rife. Advertisements have been put in newspapers—Scotch and North of England newspapers especially—offering to adopt a child for so much and at the same time, in Manchester papers for example, "asking for a home in which a baby could be taken with a small premium." In answer to these advertisements seven or eight babies have been received—together with various sums—who are handed to other persons, a profit being made on each transaction. "In one case they received £60, of which they paid £6 only to the woman who took the child; in another they kept £5 out of £10. They themselves had adopted a child with whom a premium of £250 had been paid." It seems that the original baby-farmers had committed no technical offence and so escaped punishment, as proceedings against offenders must be taken within six months of the date of the offence and all but one of those who received the children from these people escaped for the same reason. Miss Zanetti says that there is still some opposition to the "one child" case being notified and inspected, but as the result of her eight years' experience her conviction is that every child maintained for hire or reward apart from the parents should be protected by the visits of an inspector. In many cases the child is received into an overcrowded house, as "one more or less does not matter," and "fed on the domestic menu of older members of the family," and where the mother is satisfied, "and she usually says she is," the inspector has no power. There is evidently room for improvement as to the care of these most unhappy little waifs.

Last Year's Manchester Inquests.

The Manchester city coroner, Mr. E. A. Gibson, during last year held 806 inquests, though nearly 1200 deaths were reported to him. Among the verdicts were eight of wilful murder, six of manslaughter, and 49 of suicide while insane. In addition to these there were 33 where a verdict of *felo de se* was given. This latter number seems remarkable when compared with one's recollections of verdicts on suicides as given in the daily papers. What the ordinary proportion of suicides, taking the country through, which are classified as cases of *felo de se*, I do not know, but in this case it contrasts strongly with the return of the previous year, when only two such verdicts were returned. The coroner questions witnesses closely as to there having been any signs of insanity in the deceased persons. He considers that the verdict should be according to the evidence and not be determined by sentiment and advises the juries "that less stigma rests on a family if the finding is self-murder than if it is recorded that a man was

insane when he committed suicide." The question as to sanity or otherwise in a case of suicide must often be a difficult one for a jury and it is pretty well understood that the verdict of insanity is the most easily arrived at and according to the popular idea the least distressing to the friends and therefore that to which the jury generally inclines. There were 365 deaths from accident and misadventure, and 74 from excessive drinking, while 114 children were found dead in bed. In 36 of these open verdicts were returned.

Cotton Districts Convalescent Fund.

It is a far cry to the cotton famine of Lancashire and Cheshire resulting from the American war between North and South, but the efforts for the relief of the sufferers of those days are still bearing fruit in the help given to convalescents to-day. At the meeting of the governors of the fund on Feb. 2nd it was stated that during the past year 2893 patients were sent to the convalescent hospitals at Southport and Buxton at a cost of a little over £5506, against 2751 patients at a cost of something more than £4862 in the previous year.

Small-pox in Oldham.

Ten cases of small-pox were reported in Oldham during the week-end. Three persons were summoned for "failing to take proper steps to prevent the spread of the disease." Two were fined 10s. and costs, and the third, who pleaded ignorance, which the magistrates did not believe, was let off with a caution in consideration of her poverty.

Feb. 13th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Congress of the Royal Sanitary Institute.

ALTHOUGH there have been successful sessional meetings of the Royal Sanitary Institute at Cardiff and at Bristol the first congress of the institute to be held in the West of England will be opened at Bristol on July 9th, under the presidency of Sir Edward Fry. A very representative and influential local committee has been formed with Mr. Colston Wintle, the chairman of the health committee of the city corporation, as chairman. A public meeting of this committee, with others interested, was held in the Guildhall on Feb. 2nd, when the local arrangements for the congress were discussed. The Victoria rooms will be used as reception rooms and lecture rooms at the University College, together with the large hall of the blind asylum, will be available for sectional meetings; these buildings are comparatively near together, very considerably nearer than were the meeting rooms used during the congress weeks either at Bradford or at Manchester. Among the municipal institutions which the members of the congress will be able to visit there should be specially mentioned the newly erected municipal lodging house and the public baths, the latest of which is exceptionally well designed. It is to be expected, too, that in a city of unventilated sewers the question of sewer ventilation will be freely discussed. Mr. T. J. Moss Flower has been appointed the local secretary of the congress and Mr. Wintle will preside over the conference of municipal representatives, Dr. D. S. Davies over that of medical officers of health, and Mr. H. Percy Boulnois, M.Inst.C.E., over that of engineers and surveyors to sanitary authorities.

Poor-law Administration in Bristol.

At a meeting of Poor-law officers held in Bristol on Feb. 2nd Mr. J. J. Simpson, who has been clerk during the past 31 years to the Bristol board of guardians, made some very interesting references to the history of Poor-law administration in the city. The first board of guardians to be established in England and Wales was that formed in Bristol in 1696 and it was 130 years before any other towns followed suit, the board in London being formed in 1834. In the early days of the Bristol board, said Mr. Simpson, it exercised certain magisterial duties and administered a place called "purgatory." Coming to more recent times it appears that the annual Poor-law expenditure in Bristol is £140,000. Of this sum £99,000 go to the poor, lunatics cost nearly £12,000, and only about £20,000 are spent upon administration.

"Devonshire Butter."

At the meeting of the Tiverton (Devon) district council

and a large share, in bringing about the present harmonious feeling. Indeed, at the Sorbonne M. Liard, the Vice-Rector of the University of Paris, in welcoming the London county councillors, did not fail to point this out. He reminded them that Paris was the oldest university in Europe. In default of universities in their own countries so many foreigners came to Paris that they constituted what were called "nations." To this day the Rue des Anglais remains. It is close to the Sorbonne, for it runs into the Rue des Écoles, and it was the thoroughfare in which the "English nation" resided. Even to-day there are still 1600 foreign students at the University of Paris. The advent of the political *entente cordiale* and of the municipal *entente cordiale* is most welcome; but it must be remembered that they were preceded, and to a large extent rendered possible, by the international *entente cordiale* of men of science from all the centres of learning. In the great hall of the Sorbonne the London councillors were shown the platform where in 1889, before scientific representatives from all parts of the world, Pasteur and Lister met and embraced. This memorable scene constituted as it were one of the foundation stones on which it became possible subsequently to build up the *entente cordiale*. The world of science, and especially the medical profession, has ever been "in favour of peace and liberty." What progress can it hope to attain without both these blessings. Therefore, while the press throughout the world has for a whole week recorded the efforts that have been made in favour of the *entente municipale*, it is but natural and right that some record should likewise be made of the fact that the *entente scientifique et médicale* preceded and materially assisted in rendering possible the later development of the peace movement. In such circumstances the two councils were in duty bound to pay a visit to the Sorbonne where so much preliminary work had been done in favour of the *entente*.

Sir Edwin Cornwall thinks that the first steps which might be taken to realise in practice the fine sentiments expressed in all the speeches would be to effect an exchange of pupils between the London and Paris schools. But this is exactly what the universities, and notably the faculties of medicine, have done for centuries. Of course, now that travelling is so easy and comparatively cheap such exchanges of pupils from nation to nation become feasible, even among the poorer sections of the populations concerned. It has long been the practice of the middle and upper classes to send some of their children to schools abroad. Of course, if such advantages can be rendered accessible to other classes of the community the better for the cause of education and civilisation.

Leaving, however, these speculations aside and coming to specific municipal questions, it must be confessed that nothing much has been done. The intense anxiety to promote the *entente* tended to mar the bearing of the qualifying word *municipale*. There really was no time to study questions of municipal administration. It was not even possible to give any general, and still less a technical, explanation of the establishments visited unless it was by snatches of conversation held while being pushed forward hurriedly from place to place. It seems as if it was impossible on such occasions to avoid overcharging the programme; so many institutions claim the honour of a visit, and it is so difficult to refuse, particularly as the councillors are naturally anxious not to displease their electors.

To many it would seem preferable to see less but to examine and to understand better that which is seen. This is not, however, a view which would naturally present itself to the minds of the members of the Paris Municipal Council. It probably barely occurred to them that any London county councillor would seek during such a visit, or demonstration as it might more correctly be called, to study seriously some problems of municipal administration. Herein lies a fundamental difference between the two bodies that is of the utmost practical importance. The Paris municipal councillor makes municipal administration a business. So much is it a business that of late a form of insurance has been instituted so that municipal councillors are henceforth entitled to old-age pensions. Theoretically their functions are honorary, but in practice, and under the pretext of covering various expenses, they receive what amounts to a small salary with which it is possible to live in a modest manner. Apart from this they are frequently sent at the public expense to study in various towns of Europe different phases of administrative work. In England the county councillors remain at home, rarely

make such investigations, and rely very much more on the reports and information supplied by the paid officials. Consequently the English councillors are likely to have less technical knowledge than the French. In these circumstances it would have been an advantage if during their visit to Paris the London county councillors had had time to acquire some technical information.

Nevertheless, even the present flying visit has conveyed mighty lessons. Without entering into technicalities, what a sight, what a lesson the aspect of the school children must have been. Here all looked equally clean, neat, and well dressed. The councillors had to be told, and told over and over again, though it is doubtful even now whether they have all realised the fact, that all the children were poor and not a few were extremely poor. Some came from dreadful slums and yet while at school all trace of the neglect they suffer at the hands of drunken, dissolute parents is carefully effaced. During school hours, in any case, they are properly fed and made to keep clean and tidy. It would have been impossible to pick out, if judging only by appearances, those children who came from squalid miserable homes. This was a very positive object-lesson in raising the physical and social standard of a people. Then, and again without entering into technicalities, the London county councillors must have been impressed by the vast and sanitary aspect of the great central markets, the *Halles Centrales*. But far more important, so far as London is concerned, were the cattle market and municipal slaughter-house of La Villette. Here all is order and symmetry. Each category of workers, commencing with the veterinary surgeons, is organised into a society and the committees of these bodies came forward one after the other to welcome the London county councillors. This and the general view obtained, brief as it was, sufficed to show how much easier it must be to control the meat-supply at La Villette than in the innumerable and scattered private slaughter-houses existing in London. Undoubtedly this excursion should strengthen the feeling in favour of establishing one or more public abattoirs for the metropolis. The London county councillors, who also have control of the asylums for the insane, saw at the clinic and asylum of St. Anne how better instruments, operating rooms, and various accessories were obtained by concentrating in one establishment all surgical cases arising among the insane. Then they saw a practical application of the cheap and sanitary Toilet system for the building of hospitals. This was at the General or Boucicaut Hospital, where some of the councillors were impressed by the fact that, in spite of the rigorous weather, the tuberculous patients were living almost in the open air. Altogether, even in the rapid course of this visit enough was seen to impress thoroughly upon the London county councillors the fact that, apart from the politics of the *entente cordiale*, there is really much to be learnt in Paris which would be useful in improving the administration of London. Though England is well in advance in regard to sanitation and has been honoured by a considerable amount of imitation in France, nevertheless, and even in this department, there is much to be gained by a more intimate acquaintance with what has been done to preserve the health of the population of Paris. Thus from every point of view good is likely to result from the fraternal commingling of the members of the London County Council with their colleagues of the Paris Municipal Council.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

In the report of the Manchester Royal Infirmary for the past year the subject of the new infirmary and the central receiving house claims attention. Substantial progress has been made with the new hospital but nothing definite has been done towards providing the central receiving house. The matter is, however, under the careful consideration, I believe, of the medical board as to the provision that will be required for out-patients and accidents, and the infirmary board is making inquiries as to available sites and will gladly receive offers of land or buildings suitable for the purpose. The financial question also has to be faced. It is expected that the cost of the erection of the new hospital and the central receiving house will about equal the sum to be paid

of the councils shall submit to them such of the following grievances as are applicable to their own universities: (1) The undesirable reduplication of lectures, two or more courses being taken out in many cases. (2) The large number of lectures attended in the fifth or final year which was formerly intended for clinical work. Cause, overcrowded state of the curriculum. (3) The inadequate time allowed for the large number of clinical classes upon which compulsory attendance is required. (4) The absence of the teaching of pathology before the student commences the study of medicine and surgery systematically. (5) The great dearth of clinical teaching of gynaecology. (6) The need for the separation of pharmacy from pharmacology in the curriculum, while pharmacology naturally falls to be taught concurrently with medicine. (7) The necessity for a double final examination in medicine. (8) The teaching of clinical medicine on the same lines as that of clinical surgery—viz., by the institution of junior and senior clinics. (9) The unsatisfactory arrangement of the class hours—e.g., the overlapping of several of the compulsory special classes. (10) The need for a post-graduate course of study. (11) The unscientific position occupied by the study of surgery in the second year before the student has obtained the required knowledge of anatomy and physiology and pathology. This might be rectified by the teaching of surgery on general lines before the student proceeds to a special study of that subject. (12) The existence of over-much lecturing, leaving the student no time for private study and also little opportunity for gaining a practical knowledge of his profession. (13) The preliminary examination for medicine should include an examination on general lines in the subjects at present comprising the first professional examination. This would relieve the necessity for the otherwise inevitable institution of a six years' course of study.

This motion was referred to the medical committee for discussion.

6. That steps be now taken with reference to the proposed Scottish University Magazine and that a committee, with Mr. J. J. Macpherson, M.A., LL.B., as convener, and consisting of one member from each council, be appointed to investigate in the matter.

This motion was rejected.

Newhill Cottage Home and Sanatorium.

The report for 1905 states that last year was the thirty-first year of the convalescent home and the third year of the sanatorium for consumptives which is attached to it. The admissions for the year number 213, which are distributed thus: Convalescent home: 39 men, 70 women, and 28 children; total, 137. Sanatorium: 36 men, 27 women, and 13 children; total, 76. The convalescent home is intended for the benefit of respectable persons in humble life who appear to be falling into ill health or are convalescing after non-infectious ailments. The cases in 1905 were of the usual description, as anæmia, dyspepsia, bronchitis, and rheumatism. Two patients left without improvement, 30 became to all appearance quite well, and the remainder left materially improved. The sanatorium, which is open throughout the whole year, was utilised in 1905 to the utmost extent that the funds would permit. Of the 76 patients admitted two died and 11 who were in an advanced stage of the disease made no improvement. All the others were much improved and a few of the adults were cured. The children, with the exception of five who were of a weakly type, left in perfect health. In the admission of the patients to the sanatorium preference is given to cases at an early stage of the disease, but it is to be regretted that there are comparatively few applications of this kind except on behalf of children.

Feb. 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation of Addresses to the New Viceroy.

On Feb. 9th an address was presented by the Royal College of Surgeons in Ireland to his Excellency the Lord Lieutenant, the deputation including Sir Arthur Chance (the President of the College), Mr. Henry R. Swanzy (Vice-president), and several members of the council. After the usual ceremonious introduction, the address, which was read by Sir Charles A. Cameron, continued as follows:—

We beg leave on behalf of our College to give expression to those feelings of loyalty and devotion to His Majesty's Throne and person which have animated its Fellows and Licentiates since its incorporation by Royal Charter in the year 1723. The functions of our College as defined by that Charter were the regulation of the profession of surgery, and the establishment of a liberal and extensive system of surgical education in Ireland. The services rendered to the State by our College are apparent if it be remembered that large numbers of part of the Empire, while many hold commissions in His Majesty's Counties of Aberdeen, and desire to express the hope that your term of office may be marked by happiness to your Excellencies and to those you rule over.

Sir Arthur Chance and Gentlemen.—This address from the distinguished and influential body which you represent furnishes an expression of loyalty to the King and of welcome to His Majesty's

representative, which I cordially appreciate. I need hardly assure you that I recognise the far-reaching and beneficent services of the great profession and calling to which you belong, and in particular the high attainments in the science and practice of surgery which have been reached in this country. It is assuredly a cause for congratulation that your College, the centre and headquarters of the surgical profession in Ireland, can point to the fact that so many of its members have made their mark (I am speaking, of course, figuratively) in various parts of the world.

In presenting an address to the Lord Lieutenant on Feb. 12th the authorities of Trinity College, Dublin, pointed out that its honours and emoluments were open to all whom the test of examination proved to be most worthy, irrespectively of creed or religion; and also that it was 113 years since the University of Dublin opened its degrees and its teaching to students of all religious denominations. The University has also opened its degrees and prizes to women. In his reply, Lord Aberdeen, among other things, said that such an institution as theirs would have a claim for the continuance and increase of public support and approval on the ground of well-considered measures adapted to meet the large and ever-increasing requirements in regard to education generally.

Direct Representation for Ireland on the General Medical Council.

The counting of votes in this election took place on Feb. 10th when it appeared that there was a difference of only four votes in an electorate of over 3000. Sir William Thomson has demanded a re-count and scrutiny of the votes, many of the papers (about 60) having been returned by the Dead Letter Office.

Hospital Nursing in Dublin.

A nurse at the Adelaide Hospital recently committed suicide after 12 hours of night duty by swallowing two ounces from oxalic acid. The coroner's jury found that she died from poisoning and observed that the hours of night duty seemed excessive, after which much correspondence and a leading article appeared in the *Irish Times* dealing with the matter. It is well known in Dublin hospitals that a young nurse or probationer is frequently unable to stand the strain, so that many of them suffer from such troubles as swollen ankles, which require a fortnight's rest in bed to cure. It seems hard that they should suffer even from this. They come from all classes and have much more important work than an ordinary shop-girl who, on the other hand, has some prospect of advancement or superannuation, while they have none. The *Irish Times* in a leading article on Feb. 8th notes with satisfaction that the management of the Meath Hospital has determined to deal with the latter trouble and to establish a pension fund for its nurses. A ball will take place on the occasion of the second Castle levee on the evening of March 6th, the proceeds of which will be devoted to the establishment of a pension fund for nurses. The Meath Hospital proposes to make an arrangement with the Royal National Pension Fund for Nurses for the issue of policies and the payment of pensions to nurses of that hospital. The scheme is drawn up with much care and if it is carried into execution it will provide a method of dealing with the nursing question which all other hospitals in Dublin must soon follow.

Royal Victoria Hospital, Belfast.

At the bi-monthly meeting of the board of management held on Feb. 7th it was announced that the trustees of the late Mr. Henry Matier had signified their intention of making over to the hospital the sum of £5000, for which they were most cordially thanked, and special attention was drawn to the fact that it was largely through the personal influence of Dr. H. L. McKisack, a member of the hospital staff and a son-in-law of Mr. Matier, that this magnificent donation had come to the Royal Victoria Hospital. The annual meeting of the supporters will be held on March 28th and it is gratifying to be able to state that on the year's working there is a balance of £142; all the more satisfactory when taken with this circumstance is the fact that an additional unit with 32 beds has been in full working order. On the capital account a sum of £3142 has been invested.

Belfast District Lunatic Asylum.

At the monthly meeting of the committee held on Feb. 12th special attention was drawn to the congested state of the Grosvenor-road institution and it was decided to hold a meeting on Feb. 21st to consider the whole question.

Queen's College, Belfast.

A report has been issued to the subscribers showing that

held on Jan. 30th it was decided to support the resolution of the Central Chamber of Agriculture in favour of enforcing the Acts to prevent adulteration. One of the members stated that tons of foreign butter were imported and sent to Devonshire to be adulterated or mixed with that made in the county and subsequently sent to Bristol and sold as "pure Devonshire butter" at 1s. 2½d. per pound. Another speaker said he knew the place referred to and endorsed what the previous member had said. The chairman said the council could not move in the matter except to advise the county analyst.

Stroud General Hospital.

At the annual meeting of the subscribers to the Stroud General Hospital held on Jan. 31st reference was made to the resignation of Mr. A. S. Cooke who had been honorary surgeon to the hospital for the past 40 years. The chairman (Rev. G. Ormerod) reminded the governors that Mr. Cooke was the first house surgeon of the institution and at that time also undertook the duties of honorary secretary. He was, the chairman added, largely responsible for the erection of the present building and to Mr. Cooke was also due in no small measure the establishment of a Hospital Sunday in Stroud. The governors passed a unanimous vote of thanks to Mr. Cooke for his services and appointed him consulting surgeon, which carries with it the position of a life governor.

Feb. 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Universities of Edinburgh and St. Andrews Election.

THE official declaration of the poll for the election of a Member of Parliament for these Universities was made on Feb. 9th by Principal Sir William Turner. The numbers were as follows:—

	St. Andrews.	Edinburgh.	Total.
Sir John Battay Tuke ...	681	4212	4893
Mr. J. St. Loe Strachey ...	343	1967	2310

Majority for Sir John Battay Tuke ... 2583

After the figures were announced Sir William Turner congratulated Sir John Battay Tuke on the result. The successful candidate then briefly addressed those present. He said that on the whole he was not sorry that there had been a contest, for it had enabled the constituency to give expression to an important principle and that was that University representation was not to depend upon the acceptance or refusal of any special dogma whether of political economy or of adherence to a particular party. The sinking of party politics was well illustrated in the case of Lyon Playfair who in 1868 was supported by a considerable section of Conservatives. He thought that the more politics were kept out of consideration the better for the Universities. He had received the support on the present occasion of men of all shades of political opinion and he thought that a fourth of his supporters were men who differed from him on matters of general politics. He regarded the victory as an important academic victory. He felt the responsibility of his position very deeply in this new Parliament, for he had doubts as to how it would look upon medical science. The President of the Local Government Board had openly admitted that he was an enemy of vaccination and Sir John Battay Tuke was not sure that greater difficulties might not be placed in the way of the physiologist and pathologist than existed at present. He greatly regretted the absence of Sir Michael Foster from the House of Commons. He mentioned that of the 4200 men who were pledged to him at the commencement of the poll every one, save one, had fulfilled his pledge. He then thanked Mr. Strachey for his courtesy and consideration and concluded by moving a vote of thanks to Sir William Turner. This was seconded, in the absence of Mr. Strachey and Professor Shield Nicholson, by Professor Lodge. Sir John Battay Tuke was cheered by a group of students on leaving the hall and in response to their call for a speech he addressed a few sentences to them.

Professor Clifford Allbutt in Edinburgh.

On Feb. 7th Professor T. Clifford Allbutt was the guest of the evening at the annual dinner of the Royal Medical Society. In replying to the toast of his health he referred to the history of the society, to the distinguished men whom

Edinburgh had produced, and of the position which Edinburgh alumni occupied in other places. He also spoke of medical education and favoured the idea of a year of training with a practitioner after graduation. On the following day he gave a clinical address to the students attending Dr. G. A. Gibson's clinique when he spoke of heart and vessel conditions.

Proposed Changes in Examinations in the University of Edinburgh.

The University Court has been considering and has drafted changes which it is proposed to make in the curriculum for graduation in medicine and surgery. The aim of these regulations is to enable students to appear for examination in the earlier subjects of the curriculum at an earlier period than has hitherto been the case. The object aimed at is evidently to give more time for the final subjects and certainly all effort in that direction is deserving of support. It would still further help if the University Court had applied for powers to prevent, when it was thought desirable, students attending classes of an advanced division when they had failed in the subjects of an earlier division. Meanwhile the University has no such power, the result being that the work of classes sometimes gets hindered by a number of students attending who are not in a position to benefit by the class and who act as a drag upon the others. Nothing would do more to lighten teaching in the practical classes and in the Royal Infirmary than the possession of such power as is here indicated and the exercise of it by the examiners of the various divisions. All such authority comes through His Majesty in Council.

Compensation under the Public Health Act.

The First Division of the Court of Session in Edinburgh has given an important decision under the Public Health (Scotland) Act, 1897. The pursuer was a farmer in Renfrewshire and the action was raised against one of the district committees of the county for compensation for damage sustained by him through the committee exercising one of the powers conferred upon it by the Act. In September, 1904, there was an outbreak of typhoid fever in Greenock and the pursuer supplied milk to certain customers in the district in which the epidemic occurred. The local authority of the burgh of Greenock was of opinion that enteric fever was likely to be spread by the delivery of milk from the pursuer's farm and asked the defenders as local authority of the district to stop the milk-supply from the farm. The Renfrew local authority declined to grant the order and the Greenock local authority appealed to the sheriff-substitute of the county, who ordained the pursuer to cease supplying milk from his farm. From Sept. 20th to Nov. 11th, 1904, he sold no milk and he claimed compensation under the Act. The defenders repudiated liability and held that the claim for compensation should be directed against the local authority of Greenock. Lord Low, in the Outer House, had found the defenders liable and the First Division sustained the judgment, holding that although the order was pronounced by the sheriff-substitute, he represented the local authority which was responsible for dealing with the matter.

Scottish University Reform.

At a meeting of the Aberdeen Students' Representative Council in Marischal College on Feb. 3rd the following motions, carried among others at the Inter-University Conference, were discussed:—

1. That this Conference is of passed opinion that the present system of class examinations is hurtful to the best interests of Scottish university life, and that, therefore, prize lists should be fixed by the results of the degree examinations on a re-modelled basis.

This motion was rejected.

2. That, in view of the increasing importance of foreign study, work done, and attendance given, by Scottish students at foreign universities should be recognised, whenever procurable, as equivalent to similar work and attendance at our own universities.

This motion was carried.

3. That this Conference recommends to the Senatus of the four Scottish universities the necessity of affording increased facilities for the study of practical work in the Faculty of Medicine.

This motion was carried.

4. That a candidate for the degrees of M.B. and Ch.B. who has passed the first professional examination in any of our Scottish universities, be admitted to the second and subsequent professional examinations in any other Scottish university on payment of the first professional examination fee.

This motion was carried.

5. That a thorough reform of the medical curriculum is urgently called for, and that in support of this contention the secretaries

that have been made in matters of sanitation within the last ten years, there remained many problems and difficulties which could only be solved by centralisation of the department and subordination of it to the control of some medico-administrative authority. If the drafting of the sanitary regulations was left to persons unacquainted with the principles of hygiene and public medicine mistakes were likely to be made, mistakes which might have a prejudicial effect on the practical working of the regulations in question. Although the representative of the Government raised objections to Professor Toldt's proposal of constituting a Ministry of Public Health the original motion, in accordance with the petition from the medical associations, was carried.

Registration Formalities at Surgical Operations.

A misadventure which happened recently at one of the few private surgical homes in Vienna and which resulted in the death of the patient has led to the issue of an Ordinance by the Minister of Education, requiring that in future a record shall be kept of each operation and of each surgeon, nurse, and other person engaged in it, so that the respective functions of those taking part in the operation can be traced at any future time. It appears that a laparotomy for disease of the ovary had been performed upon a woman in a private hospital, but after being discharged she again fell ill and died in another hospital from peritonitis. The necropsy revealed a gauze compress which had been inadvertently left in the abdomen as the exciting cause of the fatal inflammation. The case became the subject of a judicial inquiry but there was no means of discovering who was to blame as the surgeons who were engaged in the operation could not be traced.

Professor Nothnagel's Successor.

After long and tedious negotiations a successor to the late Professor Nothnagel has been found in Professor von Noorden of Frankfurt-on-the-Main, who had been recommended by the Senate of the University of Vienna *primo loco*. The main points of the contract between the Government and the professor are as follows: the present clinic to be taken over on Oct. 1st; the building of the new clinic to be commenced not later than Jan. 1st, 1907; a grant to be made for a fourth clinical assistant to be nominated by Professor von Noorden; and a separate post to be created for a special assistant in medical chemistry at the new clinic with a prospect of early promotion to an extraordinary professorship. Professor von Noorden, who is a recognised authority on disorders of metabolism, was a collaborator on Professor Nothnagel's great "Handbook of Pathology" and enjoys a world-wide reputation. A man of exceptional ability, he will no doubt form a new school of clinical medicine in Vienna as he will be connected with a large hospital and will have at his disposal one of the best equipped clinics in the world.

Cystitis following Perforation of the Ileum by a Foreign Body.

A unique case of a foreign body in external contact with the bladder was recently encountered by Dr. Exner at an operation which he performed in Professor Hochenegg's clinic. The patient, who was a woman, had complained of pains in the abdomen and shortly afterwards a purulent cystitis troubled her severely. Cystoscopic examination showed at first nothing except hyperæmia of the mucous membrane, but ten days later when the purulent discharge had subsided, cystoscopy revealed the presence of a polypoid tumour at the apex of the bladder; whereupon suprapubic enucleation of the neoplasm was decided on. When the abdomen was opened it was discovered that the tumour was fixed to the peritoneum; the latter was therefore incised, whereupon parts of the free omentum were found adherent to the apex of the bladder and a loop of the small intestine was also fixed there by means of an attachment to the omentum. The adhesions were separated and the tumour was resected with a part of the bladder wall. The after-history of the case was quite uneventful. A catheter was passed and left in position for 12 days. The patient made a complete recovery and was discharged after six weeks. The interesting point of the case was that, although the peritoneal covering and the muscular stratum of the bladder were destroyed, the mucous membrane was not perforated by the neoplasm, the centre of which consisted of a piece of wood about one inch long, of the shape of a thick pin. As already mentioned, the omentum was adherent at the site of the lesion and one portion of the wood lay in the substance of the omentum,

while the remainder lay in the substance of the bladder. The wood had no doubt passed along the intestinal canal, had perforated it, and had begun to perforate the wall of the bladder.

Examination of the Stomach by means of the X Rays.

The digestive power of the stomach, an exact estimate of which is essential in the treatment of disorders of metabolism and diseases of the intestines, has hitherto been measured only by means of Ewald's test breakfast, with the subsequent use of the stomach pump, or by the iodine or salol reaction of the urine, as suggested by Sabli. Dr. Schwarz has recently proposed a very simple method of examining the digestive power of the gastric juice, at least as far as the digestion of connective tissue is concerned. He uses subnitrate of bismuth, a substance which is well known to cast a deep black shadow when the x rays are directed upon it. He makes the patient swallow a large pill of about one-third or half an ounce of the powdered subnitrate inclosed in an envelope of connective tissue obtained from the appendix vermiformis of an animal such as the sheep, goat, or ox. If the abdomen of the patient is exposed to the x rays a short time after swallowing the pill a deep black spot of about the size of a farthing is seen at the bottom of the stomach, on its lowest point mostly. As soon as the coating of connective tissue is digested, the powder is scattered and the contents of the stomach are well mixed with the powder, after which a fainter but extensive shadow, which gives the contour of the entire organ, is cast on the photographic plate or on the fluorescent screen. This is the case in seven hours after ingestion of the pill in healthy stomachs. If the digestion is affected, as is the case in gastroptosis, deficiency of acid, pyloric disease, and cancer, the black spot remains visible for a longer time—such as 9, 11, or even 20 hours. If the contents of the stomach are digested too quickly, as in hyperacidity, the black spot disappears in from two to five hours. The method is very simple and causes no serious inconvenience to the patient.

Feb. 10th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Public Health of the Dominion of Canada.

THE Director-General of Public Health in Canada, Dr. F. Montizambert, has his annual report ready to present to Parliament when that body meets in the course of the next two months. In it he says that in no State of the American Union along the Canadian border are there any existing cases of small-pox; consequently it has been considered advisable to withdraw all inspectors and port officials in different places where they had been stationed. On account, also, of the fact that no case of plague has occurred in San Francisco since March, 1905, inspection of all vessels arriving at British Columbia ports from that city was discontinued on Jan. 1st. Dr. Montizambert once more emphasises the importance of all health matters in the Dominion being gathered together under one departmental head, under one of the existing Ministers of the Crown, instead of being scattered throughout several departments of the Governmental service. In his report also he refers to the leper lazaretto at Tracadie, New Brunswick, on the banks of which institution there are now 17 patients, although two are not inmates but are out on parole; there are ten males and seven females. There were no deaths during the past year and only two new patients were admitted. The treatment followed in this institution consists of the administration of chaulmoogra oil and strychnine with external applications of creolin and good results ensue. One patient, a man, aged 40 years, is apparently cured of all symptoms and has been discharged and has returned to his home but will report to the physician of the institution from time to time. Dr. Montizambert has been elected chairman of the public health section of the meeting of the British Medical Association to be held in Toronto from August 21st to 25th next.

The Health of Ontario in December.

Small-pox is somewhat prevalent in the province of Ontario, although the disease is present in a rather mild form. During December, 1905, 1269 cases of the disease were reported to the Provincial Health Department, all from

the Better Equipment Fund has been raised to £70,000. The council has decided to expend £300 in procuring new up-to-date microscopes for various scientific departments of the College.—The following members of the College medical staff have been appointed examiners in the Royal University: Professor J. A. Lindsay, in medicine; Professor W. St. Clair Symmers, in pathology; Professor J. W. Byers, in midwifery; Professor T. Sinclair, in surgery; Professor Sir William Whitla, in materia medica; Professor J. Symington, in anatomy; and Professor T. H. Milroy, in physiology.

Feb. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Congenital Dislocation of the Hip.

At the meeting of the Society of Internes of the Paris hospitals, which was held on Jan. 25th, M. Judet read a paper dealing with the results in 17 cases of congenital dislocation of the hip which had been under his care. Of these cases he considered that eight might be called anatomical cures—that is to say, the head of the femur had been perfectly reduced into the cotyloid cavity. One of these cases was that of a little girl who was shown at the meeting. She had had congenital dislocation on the right side but it had been completely reduced. Her walking was perfect and it was difficult to diagnose by merely clinical methods which had been the affected side. With the illustrations afforded by numerous radiograms M. Judet was able to demonstrate that when reduction was obtained the contact of the head of the femur with the Y-shaped cartilage brought about a process of ossification resulting in the formation of a cotyloid cavity and of a normal articulation. In cases where complete reduction could not be obtained M. Judet was able to give great relief by fixing the head of the femur in the neighbourhood of the anterior inferior iliac spine. Where the dislocation can be reduced he is in favour of immobilising the hip-joint in such a position that the head of the femur and the cotyloid cavity are in apposition and accurately centred. The fixing apparatus is left in position for four or five months, at the end of which time a cure will generally be found to have taken place. M. Judet concluded by showing a "pelvixateur," by means of which the immobilisation and the application of the plaster spica bandage could easily be carried out.

The Mortality from Tuberculosis in France and in Germany.

At a meeting of the Academy of Medicine held on Jan. 23rd M. R. Robin pointed out that France does not possess the elements necessary for drawing up accurate statistics of the mortality from tuberculosis. Statistics of the cause of death are obtainable for 730 towns only. Therefore, approximate figures only can be given. Taking as a basis the years 1901, 1902, and 1903, when there was an average of 150,000 deaths from tuberculosis, he pointed out that the mortality corresponded in reality to one of 21.3 per 10,000 inhabitants, a much lower figure than had been given and one which was quite comparable with the figure given for Germany. The principal cause of the diminution of mortality from tuberculosis which has occurred during the last 25 years in both countries is due to the prophylactic measures concerned with public hygiene which have been in force during that period. French organisation for sanatorium treatment was not so perfect as German, but if the mortality in the two countries were comparable the decrease was probably not due to sanatorium treatment but to the hygienic measures to which he had referred. M. Robin, therefore, begged to move the following as a resolution:—

That the Academy considers that the Minister of the Interior should take the necessary measures that statistics of the cause of death, which at present are only obtainable for 730 towns, should henceforward be obtainable in every commune in France and that the figures should also give the total population, together with the respective areas of the communes and the density of population therein.

M. Brouardel said that he in no way wished to oppose the motion of M. Robin but the most important thing was that the causes of every case of death should be compulsorily registered. Whatever the figures obtainable at present as to the mortality from tuberculosis might be it was evident that the mortality from this disease was very high and every means should be taken to

combat this formidable malady. At the following meeting held on Jan. 30th M. Kelsch said that even for the army the statistics were by no means trustworthy. If they could not obtain exact figures for the army it would be all the more difficult to obtain them for the general population. M. Landouzy said that the mortality from tuberculosis in France and in other countries was probably really higher than that given by statistics and this was due to the very indifferent way in which death certificates were given. In Paris, for instance, for the year 1904, 27.9 per cent. of deaths were certified as "cause unknown." From a personal inquiry which he had carried out he considered that tuberculosis was increasing throughout more than half the area of France, while throughout one-third it was stationary. It increased in village communities where it was imported by factory workers and time-expired soldiers, and its development was encouraged by alcoholism, industrial progress, and the total absence of prophylactic measures. In order to bring out this development clearly it was necessary to remodel the system of nomenclature and to give directions that causes of death should be stated with more precision than at present. M. Ohauffard insisted on the social aspects of the question raised before the Academy. Improved statistical methods would lead to a better appreciation of the conditions under which tuberculosis was developed. He said that great carelessness was shown in disinfecting houses in which deaths from tuberculosis had occurred. He related the case of some rooms in which within 12 years there had been 14 deaths from tuberculosis but the rooms had never been disinfected. In his opinion disinfection should be compulsory after every death from tuberculosis.

The Intradural Administration of Stovaine.

At the meeting of the Surgical Society held on Jan. 31st M. Chaput read a paper upon the above subject. He said that during 1905 he had performed 309 operations under anesthesia brought about by the injection of stovaine into the subdural space. He considered that it was an excellent method in so far as regards operations upon the lower limbs, the ano-genital regions, for hernia or for artificial anus. Any laparotomy might also be performed with the patient anesthetised in this way. The anesthesia, however, was not completely marked in alcoholics, in patients who were very timid or nervous, in young women, and in patients who were much pulled down by pain. The method was dangerous in markedly cachectic patients. The only objection which he had found to its use was that it sometimes caused severe headache, but this could be avoided by drawing off a few cubic centimetres of the cerebro-spinal fluid before the injection.

Treatment of Unilateral Facial Spasm.

At a meeting of the Neurological Society held on Feb. 7th M. Abadie and M. Dupuy-Dutemps showed a woman who for 16 years had suffered from a left unilateral facial spasm. They had treated her by the method of Schloesser—viz., by injecting one cubic centimetre of alcohol of 80 degrees into the substance of the facial nerve at the level of the stylomastoid foramen. The patient had transitory facial paralysis and the spasm has now completely disappeared.

Feb. 13th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Question of a Ministry of Public Health.

DURING the last few weeks the Government has been paying more attention to medical affairs than it has done for many years. It is possible that the organisation of the medical profession, though in an incipient stage and not very strong, is beginning to make itself felt. Whether that be so or not the fact remains that some recent action of the Ministry of the Interior makes it probable that a Ministry of Public Health may be created. In the Upper House of Parliament Professor Toldt, who occupies the chair of anatomy in the University of Vienna and was called to the House by the Government, has presented a report on a petition from the Union of Medical Boards of Austria (Aerzte-Vereins-Verband). He recommended that the petition should be submitted for the consideration of the Government, because in spite of all the improvements

that have been made in matters of sanitation within the last ten years, there remained many problems and difficulties which could only be solved by centralisation of the department and subordination of it to the control of some medico-administrative authority. If the drafting of the sanitary regulations was left to persons unacquainted with the principles of hygiene and public medicine mistakes were likely to be made, mistakes which might have a prejudicial effect on the practical working of the regulations in question. Although the representative of the Government raised objections to Professor Toldt's proposal of constituting a Ministry of Public Health the original motion, in accordance with the petition from the medical associations, was carried.

Registration Formalities at Surgical Operations.

A misadventure which happened recently at one of the few private surgical homes in Vienna and which resulted in the death of the patient has led to the issue of an Ordinance by the Minister of Education, requiring that in future a record shall be kept of each operation and of each surgeon, nurse, and other person engaged in it, so that the respective functions of those taking part in the operation can be traced at any future time. It appears that a laparotomy for disease of the ovary had been performed upon a woman in a private hospital, but after being discharged she again fell ill and died in another hospital from peritonitis. The necropsy revealed a gauze compress which had been inadvertently left in the abdomen as the exciting cause of the fatal inflammation. The case became the subject of a judicial inquiry but there was no means of discovering who was to blame as the surgeons who were engaged in the operation could not be traced.

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Feb. 10th.

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(FROM OUR OWN CORRESPONDENT.)

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The Health of Ontario in December.

Small-pox is somewhat prevalent in the province of Ontario, although the disease is present in a rather mild form. During December, 1905, 1289 cases of the disease were reported to the Provincial Health Department, all from

20 municipalities. No deaths were reported. The ravages of pulmonary tuberculosis still continue large in Ontario. During December there were 172 deaths from that disease. Typhoid fever was also more than ordinarily present, there being 152 cases, 84 more than in December, 1904. The number of deaths from it was 45. The number of cases of scarlet fever was 151, with five deaths; diphtheria, 231 cases, with 28 deaths; and whooping-cough, 35 cases, with six deaths.

"Christian Scientists" discharged by Court.

Some time ago a young man died in Toronto from typhoid fever under "Christian Science" attention; the medical man who had first been in attendance was dismissed from the case and "Christian Science" was substituted. The medical man reported the case to the authorities of the law and the result was that shortly after the young man died several persons found themselves in a court of law in connexion with the matter. A conviction was secured but an appeal was taken to the Court of Appeal at Osgoode Hall, Toronto. This court, after due consideration of the charge and conviction, ruled that the charge had been wrongly worded against the prisoners, as it did not come under the head of any indictable offence, the charge being one of conspiracy, which was entered under a general term.

Analysis of Patent Medicines in Canada.

A child recently died in British Columbia from an overdose of a patent medicine, and the result has been to call the attention of the Dominion Government to the fact that there is no law at present on the Canadian statute books authorising the Department of Inland Revenue to take any proceedings against the manufacturers of patent medicines who use harmful ingredients in making up their medicines. Pressure is being brought to bear upon the Federal Government and the matter is now receiving the attention of the officials of the Inland Revenue Department, under whose direction analyses of a chemical character are from time to time carried out. In the meantime, as a preliminary, the department will instruct its analyst to make analyses of several of the best-known patent medicines in Canada and the future action of the department and of the Government will largely depend upon the results of these analyses.

Western Hospital, Montreal.

The annual meeting of the corporation of the Western Hospital, Montreal, was held in that city on Jan. 16th. The thirty third annual report submitted by Dr. G. H. Mathewson showed that the number of patients treated during the year was 524 and the number of consultations in the outdoor department was 6698. As the hospital building is altogether too small to provide accommodation for those seeking admittance into its wards the board of governors has decided to add a new wing to provide for 100 additional beds, which will be ready for the reception of patients before the expiration of the present year. The total receipts of the hospital were \$21,405.58, while the expenditure was \$15,541.50. Some changes have taken place on the medical staff. Dr. Grace Ritchie England (for 13 years assistant gynaecologist), Dr. J. Leslie Foley (dermatologist), and Dr. Andrew Macphail (pathologist) tendered their resignations, which were accepted. Dr. O. C. Gurd and Dr. L. Gilday succeed Dr. England and Dr. Foley and Dr. A. G. Nichols succeeds Dr. Macphail. The new wing, with complete equipment, will cost \$65,000.

Royal Victoria Hospital, Montreal.

According to the annual report of the superintendent of the Royal Victoria Hospital, Montreal, there were 3093 patients treated in the wards of that institution in 1905, an increase of 39 over the previous year. The free patients numbered 1631. The total days of hospital treatment aggregated 71,194, as against 74,777 in the preceding year. On Jan. 1st, 1905, there were 174 patients in the hospital and during the year 3085 were discharged, of whom 1348 were well, 1093 improved, 184 not improved, 278 not treated, and 182 died. There remained in the hospital on Dec. 31st, 1905, 189 patients. Of the 182 deaths 57 took place within 48 hours of admission, which thus would bring the death-rate from 5.89 to 4.05 per cent. In the 12 years during which this hospital has been in existence it has treated 29,682 patients in its wards. In the out-patient department the total number of patients treated last year was 3830. The number of consultations to these patients was 24,872: medical, 8587; surgical, 4988; eye and ear, 4524;

nose and throat, 5633; and diseases of women, 1140. The income for the year was \$160,591. The total cost per patient per day was \$1.74. Dr. J. W. Stirling was appointed ophthalmologist to the hospital in succession to the late Dr. Frank Buller.

Montreal General Hospital.

According to the annual report of the Montreal General Hospital there were treated at that institution in 1905 47,580 patients. The report shows that 3210 were treated in the wards, while 44,377 were treated in the outdoor departments, an increase of nearly 5000 over the previous year. The report also shows that during the month of December, 1905, there were 257 patients admitted to the wards and that 244 were discharged. The average daily number of sick in residence was 204. There were 27 deaths in December and the outdoor consultations in that month numbered 3769.

Feb. 3rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Rockefeller Institute for Medical Research.

THE Rockefeller Institute for Medical Research purposes to award for the year 1906-07 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the institute in New York city under the following conditions. The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiological and pathological chemistry. They are open to men and women who are properly qualified to undertake research work in any of the above-mentioned subjects and are granted for one year. The value of these scholarships and fellowships ranges from \$600 to \$1000. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications, accompanied by proper credentials, should be in the hands of Dr. L. Emmet Holt, 14, West 55th-street, New York city, secretary of the Rockefeller Institute, not later than April 1st, 1906. The announcement of the appointments will be made about May 15th. The term of service will begin preferably on Oct. 1st, but, by special arrangement, may be begun at another time.

Medical Education and Sanitary Research Work.

Considering the immense diversity of subjects included under the headings of hygiene and sanitation it is only to be expected that the necessity of specialising in them would be recognised. Dr. William T. Sedgwick of Boston, writing in *American Medicine* of Feb. 3rd, accordingly urges that a sharp separation should be made between sanitary and hygienic work in research and education. He would have sanitation mean chiefly the care of the environment, such as street cleaning and watering, refuse disposal, heating and ventilation, water-supplies, milk-supplies, sewerage, &c., and would restrict the term hygiene to such conditions affecting individuals as make up the problems of personal hygiene—namely, muscular exercise, sleep, foods and feeding, bathing, clothing, mental work, vaccination, &c. Defined in this way sanitation would be dealt with chiefly by sanitary biologists, chemists, and engineers, while hygiene would be a subject for medical men or physiologists. He would therefore make no attempt to teach in medical schools more than the most general elementary principles of the above-mentioned (and some other) sanitary subjects, leaving them to engineers, chemists, and biologists. Freed from such subjects courses in hygiene might be given in medical schools which should be practically valuable to medical men. Finally, Dr. Sedgwick insists on the necessity of permanence of position for men engaged in the public health service.

Antiseptic Dusting Powders.

In an editorial paragraph on this subject the February number of the *St. Louis Courier of Medicine* says that antiseptic powders are extensively used in wounds to prevent the putrefaction of the fluids and to inhibit the growth of pyogenic bacteria. The United States Pharmacopoeia of 1890 contained a number of valuable dusting powders, such as boric acid, acetanilid, bismuth salts, iodoform, &c., and in the eighth decennial revision two others have been added. The first of these is iodol, which bears the chemical name of tetraiodopyrrol, and is made by

the direct action of iodine on the base pyrrol in the presence of alcohol. It is a light greyish-brown, odourless, and tasteless powder, almost insoluble in water but soluble in fixed oils. It contains 89 per cent. of iodine and is a valuable antiseptic powder with less toxic power than iodoform. The second is a combination of thymol and iodine, which is extensively used under the name of aristol. It is a bright, chocolate-coloured, bulky powder, almost tasteless and having a slight aromatic odour. It is insoluble in water and glycerine, soluble with difficulty in alcohol, but readily soluble in fatty oils, ether, vaseline, chloroform, and collodion.

Feb. 5th.

Obituary.

WILLIAM HUGH HUGHES, M.R.C.S. ENG., L.S.A., J.P.

A FAMILIAR figure has been removed from Ashton-under-Lyne by the death of Mr. William Hugh Hughes. He had been resident there since 1861, the year in which he qualified. He was a student at the Manchester School of Medicine, one of the resident physicians' assistants at the Royal Infirmary, and was also for a time resident medical officer to the Chorlton Union Hospital. He had been the medical officer of health of Ashton for many years. He held many other appointments in Ashton, such as that of examining medical officer under the Factory and Workshops Act, and was also medical officer to the police force, to the workhouse, and to the Post-office. He was also honorary consulting surgeon to the Ashton-under-Lyne and District Infirmary and was a magistrate for the borough and also for the county of Lancashire. He was not a voluminous writer but had contributed articles on "The Responsibilities of Sanitary Authorities and the Operation of the Public Health Act" to the *Sanitary Record*. He was a genial, kindly man who will be regretted by his many friends.

GEORGE LOWSON, M.B., C.M. GLASG.

WE regret to learn of the death of Dr. George Lowson who passed away at his residence in William-street, Forebank, Dundee, on Feb. 10th. Early in his career he was associated with the jute industry but the influence of his uncle, the late Dr. Peter Baxter, directed his mind towards medicine. He studied in the University of Glasgow and graduated in 1890. His first appointment was as house surgeon to the Royal Infirmary at Greenock and thereafter he acted as assistant in Bilston and Manchester. He returned to his native city 13 years ago and set up in private practice in which he was successful. Two years ago Dr. Lowson met with an unfortunate accident which necessitated the loss of a limb and after the operation he never quite recovered his former cheerfulness and vigour. He was laid aside from active duty only ten days before his death owing to a severe cardiac attack. He is survived by a widow and three young children and his death is greatly mourned by all who knew him.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Johannes Kolaszek, extraordinary professor of surgery in the University of Breslau, at the age of 63 years.—Dr. Zielenziger, formerly one of the most respected practitioners in Potsdam and a poet of some repute. He was 85 years of age.—Dr. L. Schuster of Aix-la-Chapelle, well known as the author of many papers on neurological and dermatological subjects. He was 73 years of age.—Dr. J. Amann, extraordinary professor of gynaecology in the University of Munich. He had worked under Scanzoni in Würzburg and Sir J. Simpson in Edinburgh. After his return from abroad he organised special courses of instruction in gynaecology and established an out-patient and afterwards an in-patient clinic for the diseases of women in Munich. He was 74 years of age and had for several years lived in retirement. His best known works were on hysteria and puerperal fever.—Dr. Julius Cnopf of Nürnberg, a voluminous author and formerly an eminent practitioner, especially in children's diseases. He was 84 years of age.—Dr. J. V.

Wihmann, director of the Queen Louisa Hospital for Children in Copenhagen, at the age of 53 years.—Dr. Holger Prip, privat-docent of children's diseases in the University of Copenhagen.—Dr. Aliprando Moriggia, formerly professor of histology and physiology in the University of Rome.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations in January last and having conformed to the by-laws and regulations of both Colleges, the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. have been conferred on them:—

Leonard Ernest Acomb, University College, Cardiff, and Middlesex Hospital; Edward Leicester Atkinson, St. Thomas's Hospital; Cecil Knight Attlee, B.A. Cantab., Cambridge University and St. Thomas's Hospital; John Stanley Avery, University College, Bristol; Alice Barber, St. Bartholomew's Hospital; Bertram Henry Barton, St. Bartholomew's Hospital; Arthur Beeley, University of Leeds; Cecil Bennett, St. Thomas's Hospital; Leonard Christopher Blackstone, University College Hospital; Richard Osmond Bodman, University College, Bristol; Charles William Bowle, B.A. Cantab., St. Thomas's Hospital; Douglas William Anderson Bull, B.A. Cantab., Cambridge University and St. George's Hospital; Robert Burgess, B.A. Cantab., Cambridge University and London Hospital; Wilfrid Buchanan Burr, L.D.S. England, Middlesex Hospital; George Chalkin, B.A. London, Sheffield and London Hospital; Arthur de Courcy Cranston, Charles, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Herbert Drayton Clement Smith, St. Bartholomew's Hospital; Alfred Holler Clough, Guy's Hospital; Owen Cunningham Preston Cooke, London Hospital; George Lissant Cox, Cambridge and Liverpool Universities; Norman Kewell Cunningham, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Henley Frank Carl, B.A. Cantab., Cambridge University and London Hospital; Frank Bell Dalgleish, St. Thomas's Hospital; Arthur Percival Day, B.A. Cantab., Cambridge University and London Hospital; Horace Leigh Deck, University of Sydney and St. Bartholomew's Hospital; Carel Christian Alexander de Villiers, B.A., Guy's Hospital; Arthur Norman Dickson, Cambridge University and St. Thomas's Hospital; Alfred Dinuz, Charing Cross Hospital; Wilfrid Arthur Edwin Dobbin, University College, Cardiff, and St. Mary's Hospital; Guy Stanley Earl, St. George's Hospital; George Beaudric Edwards, London Hospital; John Evans, Cambridge University and St. George's Hospital; Thomas Llewellyn Evans, University College, Cardiff, and University College Hospital; Albert Henry Farlon, M.A. Cantab., Cambridge University and St. Thomas's Hospital; Arthur Roland Fisher, Leeds University and King's College Hospital; John Eugene Foreman, London Hospital; Archibald Thomas William Forrester, St. Bartholomew's Hospital; Charles Walter Gibson, Guy's Hospital; John Norman Gislater, University College Hospital; Jesse Mitchellson Potter Grell, B.A. Cantab., Cambridge University and King's College Hospital; Jonathan Grogono, London Hospital; Raby Montague Grogono, London Hospital; George Wilfrid Hardy, Leeds University; Robert Francis Hebert, St. Thomas's Hospital; George Henry Heron, St. Mary's Hospital and Liverpool University; Victor Cyril Honnebourn, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Norman Gerald Horne, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Francis Rudolf Hotop, M.B., Ch.B. New Zealand, Otago University, New Zealand; Jacob Isaac Jaffe, Dublin and King's College Hospital; Robert Rutson James, St. George's Hospital; Edwin Clark Jones, St. Thomas's Hospital; Henry Travers Jones, University College Hospital; William Howard Jones, Manchester and St. Bartholomew's Hospital; Ernest Gregor Kellgren, B.A. Cantab., Cambridge University and St. George's Hospital; Thomas William Kirby, M.D., C.M. Trinity University, Toronto, Guy's Hospital; Harold Ernest Kitchen, B.A. Cantab., Cambridge, Manchester, and St. Mary's Hospital; Thomas Bramley Layton, Guy's Hospital; Albert Lawrence Loughborough, St. Thomas's Hospital; Alexander Henry McDaniel, London Hospital; Walter Stoddard McClure, Sheffield, University College, and London Hospitals; James Eustace Macdonald, St. Bartholomew's Hospital; Sydney Gray Macdonald, B.A. Cantab., Cambridge University and St. Thomas's Hospital; William John Ogilvie Malloch, B.A., M.B., University of Toronto, London Hospital; Leonard Myer, L.D.S. Eng., Guy's Hospital; Joseph Clement Arthur Norman, London Hospital; Norman Henry Oliver, L.D.S. Eng., Guy's Hospital; William Hunt Orton, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Stewart Orton, Guy's Hospital; Charles Max Page, St. Thomas's Hospital; Ernest William Myxall Paine, St. Bartholomew's Hospital; Jeffery Wimperis Parker, University College, Cardiff, and University College Hospital; Montague Claude Melville Pitkin, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Hugh Ridley Prentice, St. Bartholomew's Hospital; William Percy Purdom, Guy's Hospital; Hamilton Ernest Quick, B.Sc. Lond., St. Bartholomew's Hospital; Alan Randle, University College Hospital; Stanislaus Reader, Guy's Hospital; Marie Joseph Jean Roger Rigoulet, M.D., Paris, University of Paris; William Octavius Sankey, St. Thomas's Hospital; Edward Schenck, M.D. Freiburg, University of Freiburg; Francis Shingleton Smith, B.A. Cantab., Cambridge University and University College, Bristol; Charles Algernon Stidson, St. Bartholomew's Hospital; John Tate, University College Hospital; Gerald Maberley Tappin, London Hospital; Francis Thompson, London Hospital; Edward Mervyn

Thomson, St. George's Hospital; Arthur Christopher Watkiss, University College Hospital; John Alexander Watt, University College Hospital; Leonard White, Westminster Hospital; Harold Beckwith Whitehouse, St. Thomas's Hospital; Edward Denis Whittle, University College Hospital; William Douglas Wilkins, M.B., Ch.B., Victoria University, Manchester; Edmund Wilkinson, University of Birmingham; Arthur Harold Williams, London Hospital and Durham University; Wilson Trevor Williamson, St. Bartholomew's Hospital; Christopher James Wilson, Cambridge University and London Hospital; Murray Richard Osmond Wilson, University College, Bristol; John Henry Wolfe, L.S.A., London Hospital; Harold Douglas Wyatt, Guy's Hospital; and William Arthur Bruce Young, M.B., Ch.B., Victoria University, Manchester.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—

28 candidates presented themselves for Part I. of the Final Professional Examination for the Licence in Dental Surgery held on Feb. 2nd and 5th, of whom 16 were approved and 12 were rejected. The Council conferred the Diploma in Dental Surgery on the following gentleman who had completed both parts of the Final Professional Examination:—

George Woolford, Middlesex, Royal Dental, and National Dental Hospitals.

The Council also conferred the Diploma in Dental Surgery on the following two gentlemen, who had previously passed the necessary examinations and have now complied with the regulations:—

John Herbert Wilson Fitzgerald, Charing Cross and Royal Dental Hospitals; and George Edward Fritche, Middlesex and National Dental Hospital.

32 candidates presented themselves for Part I. of the examination for the Diploma in Public Health, of whom 22 passed. 21 candidates presented themselves for Part II., of whom 18 passed and were therefore entitled to the diploma. The Council therefore conferred the Diploma in Public Health (in conjunction with the Royal College of Physicians of London) upon them:—

Amelius Cyril Birt, L.R.C.P., M.R.C.S., St. Thomas's and King's College Hospitals; Henry Caird, M.B., Ch.B. Edin., Edinburgh and Liverpool Universities; Herbert Chesson, L.R.C.P., M.R.C.S., St. Mary's and University College Hospitals; John Moore Collins, M.B. Lond., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Gerald Corcoran, L.R.C.P. & S.I., Dublin and University College Hospital; James Gillies, M.B., Ch.B. Edin., Edinburgh University and University College Hospital; Frederic Harvey, Captain R.A.M.C., L.R.C.P., M.R.C.S., L.S.A., St. Bartholomew's and Royal Army Medical College; George Haylett Lock, L.R.C.P., M.R.C.S., Middlesex and University College Hospitals; Greer Edmund Malcolmson, M.D. Lond., Manchester, Guy's, and Middlesex; Percy Knowles Muspratt, M.B., B.S. Camb., L.R.C.P., M.R.C.S., Cambridge and London Hospital; John Ford Northcott, M.D. Lond., L.R.C.P., M.R.C.S., Guy's and University College Hospitals; Owen Herbert Peters, M.B., Ch.B. Melb., Melbourne University and University College Hospital; John William Smyth Secombe, Lieutenant, R.A.M.C., L.R.C.P., M.R.C.S., St. George's Hospital and Royal Army Medical College; Frank Blenkinsopp Skerrett, M.B. Lond., L.R.C.P., M.R.C.S., St. Thomas's and King's College Hospitals; Lessel Philip Stephen, Captain I.M.S., M.B., Ch.B. Aberd., Aberdeen University and Royal Army Medical College; Philip Graham Stock, L.R.C.P., M.R.C.S., Royal Army Medical College and University College, Bristol; Thomas Bassell Winter, Lieutenant-Colonel R.A.M.C., M.R.C.S., L.S.A., Guy's Hospital; and Cyril Haworth Wright, M.B., Ch.B. Edin., Edinburgh University and London Hospital.

PRESENTATION TO A MEDICAL PRACTITIONER.—

On Feb. 7th the members of the Totterdown (Bristol) branch of the St. John Ambulance Brigade (marine section) presented Mr. J. J. Scammell Lucas, B.A., M.B. Lond., M.R.C.S. Eng., with a framed photograph of the members, suitably inscribed, as a mark of appreciation for his services as honorary instructor.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—

The annual dinner of this society was held at the Hotel Great Central, London, on Feb. 7th, under the chairmanship of Mr. L. A. Bidwell, the president of the society, who proposed the usual loyal toasts, which were duly honoured. Mr. J. G. Pardoe was intrusted with the task of proposing the toast of "The Imperial Forces," which was responded to by Surgeon-General A. H. Keogh, Director-General of the Army Medical Service, who interested his audience on the question of the relation of the medical profession to war. He described how on the invitation of Mr. O. R. B. Keetley a course of lectures had been arranged to be delivered at the West London Hospital on Army Medical Instruction for a civilian medical reserve. In the course of a great war Great Britain would be depleted of the officers of the Royal Army Medical Corps and it was clear that the services of civilian medical men would be required in an executive capacity for duties in the home garrisons and hospitals. There was no doubt that a medical man who had received instructions concerning army matters and methods would be

more useful in the Army Medical Service than a practitioner who was ignorant of the subject, and the course of lectures inaugurated at the West London Hospital was an attempt to provide the knowledge essential for the purpose. Surgeon-General Keogh concluded his eloquent appeal to the civilian members of the medical profession amid loud applause. The next toast was that of "The West London Medico-Chirurgical Society," which was submitted by Sir T. Lauder Brunton, who referred to the fact that the average attendance at the meetings of the society was greater than at any other society in London. The society had taken under its wing the post-graduate course at the West London Hospital and it was becoming a very great teaching centre. Mr. Bidwell, in the course of his acknowledgment of this toast, described how Dr. A. Elliot had helped in the most recent development of the society by instituting a pathological meeting, on which occasion more than 80 members were present. During his speech Mr. Bidwell announced that the membership of the society had increased to over 650 members and he congratulated those present on such a satisfactory condition of affairs. Mr. Bidwell also proposed the toast of "The Kindred Societies and Guests," which was duly acknowledged by the President of the Harvelan Society, Dr. F. W. Cook, and Mr. G. F. Marshall, a member of the committee of management of the West London Hospital. The guests separated at a late hour after the rendering of some instrumental music and an exhibition of card tricks.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ANDRE, WALTER ROBERT, M.B. Dorset, M.R.C.S. Eng., has been re-appointed Medical Officer to the Berkeley (Gloucestershire) Hospital.
BRODIE, DESBOROUGH, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Tetbury (Gloucestershire) Cottage Hospital.
BROWN, W. LANGDON, M.D. Cantab., M.R.C.P., has been appointed Medical Registrar and Demonstrator of Morbid Anatomy to St. Bartholomew's Hospital.
CARWARDINE, T. M.S., M.B. Lond., F.R.C.S., has been appointed Honorary Surgeon to the Bristol Royal Infirmary.
GEDGE, ARTHUR SYDNEY, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer for the Fifth District by the Devizes Board of Guardians.
LITTLEJOHN, H. H., M.B., F.R.C.S. Edin., has been appointed Professor of Forensic Medicine in the University of Edinburgh.
MACGILLIVRAY, W. J. HOOKER, L.R.C.P., L.R.O.S., L.M. Edin., L.F.P.S. Glasg., has been appointed Medical Referee to the General Life Assurance Co. for Districts of Rusholme and Fallowfield, Manchester.
MELLISH, JOHN STAFFORD, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Tetbury (Gloucestershire) Cottage Hospital.
SCOTT, T. GRAHAM, M.R.C.S., L.R.C.P. Lond., has been appointed Anaesthetist to the Dreadnought Hospital on Mondays.
SIMPSON, J. B., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Hospital for Women and Children, Leeds.
WALKER, THOMAS WARBURTON, M.B., Ch.B. Vict., has been appointed Surgeon to the Tetbury (Gloucestershire) Cottage Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BLACKBURN AND EAST LANCASHIRE INFIRMARY. — Junior House Surgeon. Salary £70 per annum, with board, washing, &c.
BRISTOL ROYAL INFIRMARY. — House Physician. Salary £180 a year, with apartments, board, and laundry. Also Surgical Registrar.
CAMBRIDGE, ADDENBROOKE'S HOSPITAL. — House Physician. Salary £65 per annum, with board, residence, and laundry. Also Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and laundry.
DEVON COUNTY ASYLUM. — Third Assistant Medical Officer. Salary £125, rising to £155, with board, residence, and laundry.
EVELING HOSPITAL, Southwark Bridge-road, London, S.E. — Assistant House Surgeon for three months. Salary at rate of £70 per annum, with board, residence, and washing.
FARRINGTON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn circus, E.C. — Honorary Physician.
HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C. — Assistant Surgeon.
HULL ROYAL INFIRMARY. — House Surgeon, unmarried. Salary 80 guineas per annum, with board and apartments.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTON DISPENSARY.—Assistant House Surgeon. Salary £75, with residence, board, and washing.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Third House Surgeon. Salary £50 per year, resident.

ITALIAN HOSPITAL, Queen-square, London, W.C.—Honorary Assistant Dental Surgeon.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Assistant Surgeon.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodging.

LINCOLN INFIRMARY.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Two House Surgeons. Salary £50 each per annum, with residence and maintenance.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Honorarium at rate of 50 guineas per annum, with board, residence, &c.

MANCHESTER PORT SANITARY AUTHORITY.—Medical Officer of Health. Salary offered £350 per annum, with out-of-pocket expenses.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Three Clinical Assistants and an Anæsthetist.

PUBLIC DISPENSARY, 53, Stanhope-street, Clare Market.—Resident Medical Officer, unmarried. Salary £165 per annum, with apartments, coal, and electric light.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SETTLERS' OF WOMEN WORKERS, Canning Town, E.—MEDICAL MISSION HOSPITAL.—Assistant Doctor for Dispensary (female). Board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

TORBAY HOSPITAL, Torquay.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 a year, with board and apartments.

WARRICK COUNTY LUNATIC ASYLUM.—Assistant Medical Officer. Salary £130, with board, apartments, and laundry.

WINCHESTER, CITY OF.—Medical Officer of Health. Salary £500 per annum.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CARTER.—On Feb. 4th, at the Abbey House, Shaftesbury, Dorset, the wife of H. H. A. Carter, I.R.C.P. & S. Irel., of a daughter.

DAVIDSON.—On Feb. 28th, at Riverside Lodge, Teddington, the wife of Harold Davidson, M.R.C.S., L.R.C.P., of a son.

MARJORIBANKS.—On Feb. 3rd, at Caversham Lodge, Green-lanes, Haringey, N., to Dr. and Mrs. Robert Bruce Marjoribanks—a daughter.

MUNRO.—On Feb. 7th, at 55, Abchurch-lane, S.W., to Louise M. E. Munro and Donald J. B. Munro, M.B., B.S.—a son.

MARRIAGES.

BENNETT-TENNENT.—On Jan. 30th, at St. Stephen's Church, Hampstead, John Menlove Bennett, M.A., M.D., B.C. Cantab., elder son of John Rowe Bennett, Nursted House, Petersfield, to Dora Lydia Vere, daughter of the late H. L. Tennent, Sheridansubstitute of Renfrewshire.

GLIMORE-CARR.—On Feb. 14th, at St. James' Church, Spanish-place, Owen E. Glimore, M.D., F.R.C.S., to Maitty, youngest daughter of the late Mr. and Mrs. Lancelotti Carr of Curry-vill, Glamorganshire.

HADFIELD-MACDOUGALL.—On Feb. 14th, at St. Bartholomew's the Great, Wm. Smithfield, Charles F. Hadfield, M.A., M.R.C.S., L.R.C.P., to Winifield Elizabeth, youngest daughter of Alex. W. MacDougall, Esq., Barrister-at-law.

DEATHS.

BAYLEY.—On the 25th ult., at Bourne-mouth, Reginald Bayley, M.R.C.S., formerly of Vine House, Kingston-on-Thames.

DURHAM.—On the 16th February, at 22, Ellersdale-road, N.W., Mary, widow of the late Arthur E. Durham, F.R.C.S., consulting surgeon to Guy's Hospital. (No flowers, by request.)

FAIRCLOUGH.—On Feb. 14th, at Knowle Cottage, Mirdfield, aged 55 years, Thomas Butler Fairclough, surgeon.

HUGHES.—On Feb. 14th, at Harwood, Ashton-under-Lyne, William Hugh Hughes, M.R.C.S., L.S.A., J.P.

LOWSON.—At Duncraig, William-street, Dundee, on the 10th inst., George Lowson, M.B., C.M., aged 23 years.

PARKES.—On Feb. 10th, at Fern Lodge, Bridgwater, Francis John Crane Parkes, M.R.C.S., L.R.C.P., youngest son of the late John Parkes, aged 28 years.

WISLOW.—On the 14th instant, at 35, Sandgate-road, Folkestone, Florence Jessie, wife of Dr. L. Forbes Wislow, of 11, Burwood-Harley-street, London.

WYNN.—On Feb. 8th, at Lower-crescent, Brighton, Frederick Wood, F.R.C.S. Eng., in his 57th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE SOUTH AND SOUTH-WEST COAST SYNDICATE.

Two rogues trading under the above title at 155, Stamford-street, London, S.E., were sentenced on Feb. 9th to three years' penal servitude and eighteen months' hard labour respectively, their names being William Davenport and Vyvyan H. Meyle, a clerk in Holy Orders. Their offence was contained in a number of counts, the chief one being conspiracy to defraud. Among other visionary schemes which they put forward as a means of extracting money from their dupes was one which, according to a certificate put in at the trial, was the means "of bringing back to life apparently dying—and even actually dead—human beings." This, prisoners' counsel explained, was an apparatus for keeping up artificial respiration. In their advertisements they also promised enormous profits from a fishing scheme. They have got their deserts, but what we wish to point out is that they obtained the ear of the public to great extent by advertising and we consider that the proprietors of magazines who inserted their advertisements are morally just as guilty as the prisoners themselves. We have before us a copy of the *Nore Magazine* for November, 1905, published by Messrs. Pearson, Limited, of Henrietta-street, and on the page of advertisements which comes next to the table of contents we see the advertisement of the syndicate. The first sentences of this effusion run: "£1 a day and 12 per cent. a year for each £50 withdrawable deposit. Minimum £25, maximum £1000. Capital and interest absolutely secured by British Mortgage Bonds." Any advertisement editor who inserted this drivel in good faith must be either singularly ignorant or else singularly credulous. That the concern must be fraudulent is evident on the face of it.

WHAT WAS THE CAUSE?

We have received the following communication from a lady whose name we omit but we think that the letter will interest our readers.

To the Editors of THE LANCET.

SIRS,—I am interested in surgery and especially ovariotomy. Can any medical man give me some information on the bursting of the pedicle? A London surgeon and professor of surgery recently operated in a case known to me. He was asked to take particular care in securing the pedicle. The caution came from *occuli* sources. He promised to do so; nevertheless the knot slipped in a few hours. The hemorrhage was stopped but paralysis of the stomach followed and the patient died from the effects of the pump. Has any surgeon knowledge of a patient recovering from such paralysis? What was the probable cause?

I am, Sirs, yours faithfully,

UNWELCOME VISITORS.

To the Editors of THE LANCET.

SIRS,—I am requested by my committee to thank you for your article "Unwelcome Visitors" and at the same time to point out that the experience of our members, who call on medical men, enables them to say emphatically that it is only very rarely they are deemed unwelcome. The great majority of representatives are men of infinite tact and discretion and the most unlikely persons to outstay their welcome or transgress the canons of good taste in any way. That our wars are of interest to the profession at large was evidenced by the large attendance of medical men at the London Medical Exhibition in October last, and if the writer of the article referred to would notice the evident pleasant relations which exist between the "Persecuted" and the representative at the various medical exhibitions he would possibly refer to us as *necessary* rather than "unwelcome visitors."

I am, Sirs, yours faithfully,

J. L. BAILEY, Honorary Secretary.

The St. Vincent Association, Devonshire-square, E.C.,
Feb. 15th, 1906.

THE ESTIMATION OF ATMOSPHERIC DUST.

MANY methods have been suggested to ascertain the amount of dust contained in the air of large cities. The best known of these consists in drawing a known volume of air through a cotton or glass wool filter and in weighing the filter before and after the operation. In other processes the number of the dust particles is calculated, for which purpose an apparatus is employed by means of which the air is drawn against a plate covered with a moist substance and the adherent dust particles are afterwards counted by the aid of a microscope. A novel method of an especially simple and practical kind is described by Dr. Alfred Gradenwitz in the *Scientific American* of Feb. 3rd. It is the invention of Dr. Vörner of Leipzig and Professor F. Hofmann and is based on the counting of dust particles, weight not being taken into account. In constructing his apparatus Dr. Vörner availed himself of the fact that the dust deposited on polished black surfaces is easily seen. A blackened resinous substance was therefore melted and allowed to solidify on a glass plate in a horizontal position. On observation

under the microscope the fresh surface was seen to show an absolute uniformity and a perfect polish. Though ordinary daylight was quite sufficient for the examination of these dark plates it was found to be better to use an incandescent gas lamp at a fixed distance from the plate, the light being concentrated by a convex lens and striking the plate at an angle of about 37°. In order to keep the resin plates free from dust up to the moment when the experiment is started Dr. Vörner placed a glass ring three-quarters of a millimetre in height on the semi-liquid resinous mass, and on it was placed a watch-glass, the space between the glass ring and watch-glass being filled with vaseline. In carrying out an experiment the watch-glass is removed and an exposure is made for ten minutes, after which it is replaced in position, the resin plate is observed under the microscope, and the number of dust particles per square centimetre is calculated.

WANTED—A SUGGESTION FOR TREATMENT.

To the Editors of THE LANCET.

SIRS,—I have at the present time under treatment what would be considered in hospital practice an "interesting case"—of cataplexy—in a girl, 23 years of age. The attacks have occurred for the past 12 months periodically, upon an average every six weeks, when she passes into a sound, peaceful sleep for from eight to 15 days. The conjunctival reflex is never abolished. She takes nourishment, consisting of milk and eggs and beef-tea, fairly well throughout; but at times this diet she refuses, when she is fed artificially by nutrient suppositories. She has slight uterine prolapse, with backward displacement, for which she wears a watch-spring pessary. She suffers also from menorrhagia and takes iron and astringents during the intervals of her somnolency. She is generally constipated for several days which is relieved by a five-grain dose of calomel. The girl, though not robust, has had no serious illness nor does she suffer from "nerves" or hysterical fits and her family history is unimportant. On awaking from sleep her health does not appear to be in the least affected. She remembers nothing but is quite prepared to partake of food. If any readers of THE LANCET would kindly make any suggestion in this distressing case as to what steps (if any) should be adopted to curtail or eventually cure my patient of her malady, I should feel greatly obliged. I am, Sirs, yours faithfully,

Putney, S.W., Feb. 6th, 1905.

J. FRENCH BLAKE.

APPLIANCES FOR THE PROTECTION OF WORKMEN EMPLOYED IN DANGEROUS TRADES.

WE have received from Messrs. Wallach Bros. of 57, Gracechurch-street, London, E.C., an illustrated list of their appliances in use in coal mines, chemical works, on board ship, by fire brigades, &c. Notable among the life-saving appliances illustrated and described is the portable oxygen supply equipment, including a patent oxygen apparatus for the use of rescue parties. There is also a nasal air purifier which presents important advantages and we may mention also that important adjunct to the equipment of rescue parties, a miner's electric safety lamp. The list includes some well designed respirators.

SUPERCILIARY GYMNASTICS.

To the Editors of THE LANCET.

SIRS,—It may be interesting to your correspondents on this subject to hear of another case. I am able to raise either eyebrow at will keeping the other steady or frowning with it. I can also move the right or left ear while the other is steady, or both of them together voluntarily. Moreover, I have the power to move both nostrils without inhaling air, while every other feature of the face is perfectly still. I am, Sirs, yours faithfully,

Feb. 10th, 1906.

K. W.

* * We have received other letters showing that the feats enumerated by our correspondents are not very rare. For this reason we do not think that it is necessary to record further instances.—ED. L.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I write to ask if any of your readers could kindly furnish me with useful information and advice. A friend of mine has three children (aged nine years, five years, and one year and eight months) recently recovered from measles and now suffering from whooping-cough. In each case bronchial, gastric, and nervous disturbance is well marked. The oldest is exceedingly nervous and is, I fear, tuberculous; the youngest is becoming exhausted owing to vomiting; and the remaining child suffering, though in less degree, from nervous depression and gastric irritation. In these circumstances skillful nursing is essential to the children's safety, but unfortunately their mother cannot either carry out instructions or furnish accurate report; their father is compelled to absent himself on business all day and the mother will not brook the introduction of a skilled nurse. If the children could be taken into a home where they would be properly nursed the father would gladly pay a reasonable amount and be very grateful for necessary information, as he considers the children's lives are at stake.—Thanking you in anticipation of satisfactory answer, I am, Sirs, yours faithfully,

Feb. 13th, 1906.

MEDICS.

Holmes.—The occupation mentioned by our correspondent might prejudice his chances if he resumed practice after leaving his proposed post. We do not know that the General Medical Council would take any official cognizance of such a matter, unless a medical man, not being professionally employed, should none the less make use—i.e., improper use—of his professional status.

BERATA.—In the letter from our Paris Correspondent which appeared in THE LANCET of Feb. 10th, in the paragraph headed "The Treatment of Hydatid Cysts of the Liver," the name "Canut" in line 1 should read "Quénu"; in line 11 it should read "Broca."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (3.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (19th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M. Lettsomian Lecture.—Mr. G. A. Ballance: Some Points in the Surgery of Brain Abscess (Lecture II.).

TUESDAY (20th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Prof. A. S. Grünbaum: General Sarcomatosis of the Pia Mater.—Dr. H. G. Bushnell: (1) Case of Leukæmia; (2) Case of Lymphocythæmia without Lymphatic Enlargement.—Dr. J. Bernstein: (1) Phlegmonous Gastritis; (2) Doubling of Spinal Cord.—Mr. S. G. Shattock: Primary Squamous-celled Carcinoma of Male Urethra.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Prof. F. W. Keeble: Action of Anæsthetics on Lower Forms of Life.

THE APOTHECARY SOCIETY (Apothecaries' Hall, Blackfriars).—4.30 P.M. Conversazione. Mr. T. Mabery: The Preparation of Antidiphtheric Serum (illustrated by line light views).—Dr. S. Tidy: Clouds and Climate.—Mr. F. Clark: Some Uses of High Frequency Currents.

WEDNESDAY (21st).—ROYAL METEOROLOGICAL SOCIETY (70, Victoria-street, Westminster, S.W.).—7.30 P.M. Paper.—Mr. W. B. Newton: The Dispersal or Prevention of Fog.

FRIDAY (23rd).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. J. Sherren: Three Cases of Intestinal Obstruction.—Mr. H. W. Carson: Three Cases of Appendicitis due to Transposition of Viscera.—Mr. J. D. Malcolm: A Case of Appendix Abscess with Severe Hemorrhage.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

- MONDAY (18th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.**—5 P.M. Prof. H. J. Paterson: Some of the Results of Gastric Surgery. (Lecture I.)
- MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).**—4 P.M. Mr. W. Evans: Clinique. (Skin). 5.15 P.M. Lecture.—Dr. G. A. Sutherland: Tuberculous Peritonitis.
- POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).**—5 P.M. Dr. Hood: Mitral Stenosis.
- TUESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).**—4 P.M. Dr. E. Cautley: Clinique. (Medical). 5.15 P.M. Lecture.—Mr. H. B. Robinson: Some Unusual Forms of Hernia.
- POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).**—5 P.M. Dr. M. Moulton: Cancer of the Uterus.
- NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).**—3.30 P.M. Clinical Lecture.—Sir W. Gowers.
- NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).**—4.30 P.M. Dr. G. B. Price: Pathological Demonstration.
- ROYAL INSTITUTION OF GREAT BRITAIN (Alderman-street, W.).**—5 P.M. Prof. W. Stirling: Food and Nutrition. (Lecture III.)
- WEDNESDAY (21st).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.**—5 P.M. Prof. H. J. Paterson: Some of the Results of Gastric Surgery. (Lecture II.)
- MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).**—4 P.M. Mr. E. Over: Clinique. (Surgical). 5.15 P.M. Lecture.—Dr. E. Hutchinson: Dilatation of the Stomach.
- POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).**—5 P.M. Dr. Ballard: Practical Medicine.
- UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).**—4 P.M. Clinical Lecture.—Dr. S. Martin: Acute Plentury with Effusion.
- CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).**—5 P.M. Demonstration.—Mr. C. Nourse: Nasal Accessory Sinuses.
- HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).**—4 P.M. Dr. M'Guire: Bronchiectasis.
- THURSDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).**—4 P.M. Mr. Hutchinson: Clinique. (Surgical). 5.15 P.M. Lecture.—Dr. E. Hutchinson: Chronic Gastritis.
- POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).**—5 P.M. Mr. Baldwin: Practical Surgery.
- CHARING CROSS HOSPITAL.**—4 P.M. Mr. Gibbs: Demonstration of Surgical Cases. (Post-Graduate Course.)
- SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).**—3 P.M. Lecture.—Mr. Doran: Clinical Features of Diseases of the Fallopian Tubes.
- ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).**—6 P.M. Dr. M. Dockrell: Treatment (Constitutional and Local in all its forms). (Chesfield Lecture.)
- MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).**—5 P.M. Lecture.—Dr. F. P. Vetter: Climate and Health Resorts in Tuberculosis. (Post-Graduate Course.)
- HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.C.).**—4 P.M. Lecture.—Dr. Batten: Scoury.
- NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).**—4.30 P.M. Dr. H. Cooper: Demonstration on Electro-Biodes.
- FRIDAY (23rd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.**—5 P.M. Prof. H. J. Paterson: Some of the Results of Gastric Surgery. (Lecture III.)
- MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).**—4 P.M. Mr. E. Clarke: Clinique. (Eye).
- POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).**—5 P.M. Dr. Abraham: Cases of Skin Disease.
- NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).**—3.30 P.M. Clinical Lecture.—Dr. A. Turner: Chorea.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

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VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, Feb. 15th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Relative Humidity.	Solar Radiation in Fahren.	Max. Temp. in Shade.	Min. Temp. in Shade.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 9	29.75	N.W.	612	65	42	32	32	34	Fine
" 10	29.28	S.W.	013	55	50	35	32	42	Rainy
" 11	29.57	S.W.	012	72	42	33	37	33	Windy
" 12	29.45	W.	004	64	43	33	37	33	Cloudy
" 13	29.47	S.W.	—	71	42	33	34	35	Windy
" 14	29.65	S.W.	012	75	47	32	33	34	Fine
" 15	29.56	S.W.	012	45	43	34	43	41	Cloudy

During the week marked copies of the following newspapers have been received: York Post, Morning Post, Echo, Chronicle, Bristol Mercury, Westminster Gazette, Birmingham Post, Daily Telegraph, Hampshire Advertiser, Southampton Echo, Acton Gazette, Morning Advertiser, Daily News, Westminster Midland Express, Newcastle Chronicle, Home Mercury, Scientific American, Glasgow Herald, Hyde Reporter, &c.

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The Hunterian Lectures

ON

PHLEBITIS AND THROMBOSIS.

Delivered before the Royal College of Surgeons of England on
March 5th, 7th, and 9th, 1906.

By WARRINGTON HAWARD, F.R.C.S. Eng.,

HUNTERIAN PROFESSOR OF SURGERY AND PATHOLOGY IN THE ROYAL
COLLEGE OF SURGEONS OF ENGLAND; CONSULTING SURGEON
TO ST. GEORGE'S HOSPITAL; PRESIDENT OF THE
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

LECTURE I.

Delivered on March 5th.

MR. PRESIDENT AND GENTLEMEN.—It has always seemed to me that our interest in a disease should be in proportion not to the rarity but to the commonness of its occurrence. It is true that the careful investigation of an unusual affection may throw a light upon some pathological process which is common to other diseases and thus give a wider significance than would at first appear to belong to such observations; but surely the study of conditions which we are frequently called upon to treat must possess for us a still greater importance. I have therefore ventured to devote the lectures which I have the honour to deliver here to the subject of thrombosis and phlebitis, conditions which are of no uncommon occurrence and concerning which there yet appear to me to be some points worthy of consideration. I am the more encouraged to ask your attention to this topic because, having for some years been making and collecting observations relating to thrombosis, I have found that the remoter effects of the disease do not seem to have attracted much attention from surgeons.

Coagulation of blood within the living vessels occurs under a variety of conditions of which the mode of origin is in some cases well understood and sufficiently obvious, while of others it is obscure and difficult to explain. A thrombus may be the result or the cause of inflammation of the containing vessel; it may be determined by a change in the blood or by a change in the vessel which contains the blood.

As the fluidity of the blood and its proper circulation depend upon the maintenance of the normal physiological relations between the blood and the vessels, conditions which disturb these relations will give rise to thrombosis. The most obvious of such disturbing conditions are traumatic. A wound, laceration, or contusion of a blood-vessel may lead to the formation of a thrombus by interfering with the integrity of the vessel wall. Other injuries, such as burns and fractures, neighbouring irritation or suppuration, or anything giving rise to inflammation of the vessel, are causes of thrombosis. So also degeneration of the arterial or venous coats, dilatations, aneurysms and varices, and pressure or other causes of retardation or arrest of the blood stream in the vessel and in the *vasa vasorum* may give rise to the formation of a thrombus. Other causes of thrombosis are changes in the blood, of which some of the most important are due to the invasion of micro-organisms. There is an increased tendency to coagulation of the blood in *anæmia* and *chlorosis*, in *phthisis* and other debilitating diseases, in certain acute diseases, after fevers, hæmorrhage, and long-continued suppuration, and in conditions of exhaustion.

The process of coagulation has been much discussed and the relative importance of the factors in its production is still undetermined. The presence of fibrinogen and fibrin ferment is certainly essential and probably also the presence of a soluble salt of calcium; but the source of the fibrin ferment remains a matter of dispute. Cohnheim and others have maintained that the leucocytes play the chief part in the process of thrombosis, Schmidt of Dorpat and his followers stating that the leucocytes by disintegration form fibrinoplastin or paraglobulin and the ferment—the fibrinogen existing naturally in the blood plasma; while, on the other hand, Eberth and Schimmelbusch, followed by numerous other observers, attribute the greater importance to the blood platelets.

No. 4306.

This much may, I think, with some confidence be stated: that healthy blood contained in normal vessels consists of a fluid (the plasma) which holds in solution a proteid material (fibrinogen); in this fluid are suspended the red corpuscles, the various colourless corpuscles, and the blood platelets; that if the normal relations between the blood and the vessels are disturbed coagulation may occur; and this involves the appearance in the blood (probably from changes in the colourless corpuscles and platelets) of a nucleo-proteid, which with a soluble salt of calcium forms fibrin ferment, and this acting upon the fibrinogen of the plasma leads to the formation of fibrin which with the entangled corpuscles forms the clot.

There has been a good deal of difference of opinion as to the origin and function of the platelets, some observers maintaining that they do not exist in normal blood but are the result of the disintegration of the corpuscles; others that they may exist in normal blood but that they are derivatives of the leucocytes or of the red corpuscles; others, again, that they are the progenitors of the red corpuscles. But the tendency of recent researches has been to regard the platelets as independent elements of the blood and to attribute to them an important influence in the process of coagulation. The evidence in this direction seems to me to be convincing.

Although the blood plates were described as long ago as 1842 by Donné in a paper on the origin of the corpuscles of the blood, and various theories concerning them were promulgated from time to time, it was Bizzozero's¹ paper published in 1882 which aroused a fresh interest in these bodies and led to much new investigation. Bizzozero maintained that the blood plates were definite and regular elements of the normal circulating blood, and though this was disputed by other observers his observations have since been abundantly confirmed.

Professor W. Osler² in his Cartwright Lectures on the Physiology of the Blood Corpuscles, published in 1886, records a number of interesting observations upon the blood plates. He agrees with Bizzozero that they are normal elements of the blood and he points out that their tendency to agglutinate and to undergo rapid changes when the normal conditions are disturbed renders them extremely difficult to observe and that this may account for the discrepancies in the descriptions of various observers. This agglutination is quite different from that of the red corpuscles; they do not form rouleaux but become fused together in a granular mass. Professor Osler gives the relative number of the plates as about 1 to 18 or 20 of the red corpuscles (a lower estimate than most observers) and he found that the number varied in conditions of disease. In the formation of a thrombus he observed that the blood plates were the first elements which collect upon the vessel wall and that in the process of coagulation the fibrin filaments spread chiefly, though not exclusively, from the plate masses as centres. He saw no indication whatever of the disintegration of leucocytes.

Dr. Robert Muir in his papers on the Physiology and Pathology of the Blood,³ published in the *Journal of Anatomy and Physiology* for 1891, has given a most careful description with beautiful drawings of the blood plates, together with directions as to the best way of observing them. In fresh undiluted normal blood, examined a few seconds after withdrawal from the vessels, he found numerous blood plates among the red and white corpuscles. He describes them as round or oval disc-like bodies, about one-fourth the diameter of a red corpuscle, slightly convex, faintly granular, and colourless. His observations show that in their staining reactions, in their structure, and in their chemical composition they differ from all the other elements of the blood and that they have definite characters peculiar to themselves. In shed blood they rapidly undergo certain changes connected with the process of coagulation. They become adhesive, stellate, more granular and refractile, and are soon aggregated into small groups. After about three minutes the formation of fibrin commences, delicate threads of which appear round the groups of altered blood plates. These changes can be prevented or retarded by various methods which prevent the coagulation of the blood, such as the addition of neutral salt solutions or exposing the

¹ Virchow's Archiv, vol. xc., p. 251.

² Cartwright Lectures on the Physiology of the Blood Corpuscles, Medical News, 1886, p. 363. See also Osler on the History of Blood Platelets, Johns Hopkins Hospital Bulletin, May, 1906.

³ The Physiology and Pathology of the Blood, by Dr. Robert Muir, Journal of Anatomy and Physiology, 1891, vol. xxv., p. 256.

blood to a low temperature. On the other hand, if a foreign body is introduced into the living vessels, or if the vessel by injury or otherwise loses its normal condition, the blood plates undergo the same changes that they do outside the vessels, adhering to each other, to the foreign body, and to the vessel wall, and becoming fused together into a granular mass, which is the starting point of a thrombus.

Professor G. T. Kemp and Miss H. Calhoun communicated some important observations with regard to the blood plates to the International Congress of Physicians at Turin in 1901.⁴ As the result of 75 observations on 19 different individuals they estimated the average number of platelets in normal blood as 778,000 per cubic millimetre.⁵ "The number bore no definite relation to the number of leucocytes but the ratio to the number of red corpuscles was fairly constant. The connexion of the blood platelets and the leucocytes with coagulation was determined by a method which the authors proposed to name 'fractional defibrination.' A certain fraction of the calculated blood of an animal was drawn, defibrinated, filtered, and returned to the circulation. This process was repeated until fibrin was no longer formed. At each stage the red corpuscles, the leucocytes, and the platelets were counted." "The platelets disappeared progressively with each defibrination and after the blood ceased to be coagulable (from the sixth to the tenth defibrination) they were no longer present. The leucocytes disappeared to some extent but never completely. The red corpuscles suffered some diminution but much less than the leucocytes." The platelets were seen to be bi-concave but they were never found to contain traces of haemoglobin and therefore could not be regarded as hamatoblasts in Hayem's sense. "The micro-chemical reactions resembled to some extent those of red corpuscles and also those of the nuclei of leucocytes but were identical with neither." "The authors agreed with Bizzozzeri that they were independent elements of the blood." Dr. A. Petrone of Naples at the same congress related researches pointing to the same conclusions as to the independence of the blood platelets as separate elements of the blood. Wooldridge remarks in this connexion: "Blutplättchen are regarded by all observers who have attacked the problem as definite form elements, by which I understand them to mean organised bodies; and it is difficult to know how else to regard them, for they have just as much right to be regarded as a form element as a red corpuscle has. Many attributes to these bodies, in regard to coagulation, the powers which Schmidt has referred to the white corpuscles. I think they are perfectly right." But Wooldridge maintained⁶ that fibrin could also be produced as the result of an interaction between two or more fluid fibrinogens or proteid-*lecithin* compounds of different chemical composition, of which interaction the fibrin ferment is a by-product; and he drew attention to the important part played by *lecithin* in the process of coagulation. Professor W. D. Halliburton and Professor T. G. Brodie⁷ have shown that nucleal-albumin, free from *lecithin*, obtained from the tissues of various organs, when injected into the circulation of rabbits produces instantaneous and fatal coagulation of the blood; and they consider it probable that in cases of fatal and extensive thrombosis occurring in the human subject death may be due to the entrance into the blood of the same material.

"..... with a sudden vigour, it doth possess
And curd, like eager droppings into milk,
The thin and wholesome blood."⁸

⁴ Reported in Brit. Med. Jour., vol. II, 1902, p. 1539.

⁵ It will be remembered that in normal blood the number of leucocytes per cubic millimetre is about 10,000, the number of red corpuscles per cubic millimetre is about 5,000,000. Messrs. Brodie and Russell estimated the number of blood platelets as 635,300 per cubic millimetre or 1.85 of red corpuscles. Dr. J. H. Pratt of Boston, U.S.A. (Journal of the American Medical Association, Dec. 30th, 1905, p. 1939), gives the average number of platelets per cubic millimetre as 469,000.

⁶ Dr. Robert Muir came to the same conclusion as to Hayem's theory. Op. cit., p. 500.

⁷ Wooldridge: The Chemistry of the Blood and other papers. Edited by Horsley and Starling, 1893, p. 177. After I had written these lectures my friend, Dr. G. A. Buckmaster, kindly allowed me to read the proofs of part of a lecture in which he treats of the origin of the blood platelets and records his investigations into the subject. Dr. Buckmaster has come to the conclusion that blood platelets do not exist in normal living blood but are pathological or artificial products. I have the greatest respect for Dr. Buckmaster's views but I do not understand how Dr. Buckmaster's negative observations invalidate the those of observers (Eberth and Schimmelbusch) who have seen the platelets in the vessels of the living mesentery or (Laker) in the membrane of the wing of the young bat.

⁸ Wooldridge: Ibid., pp. 190, 241. This statement was based on observations made with "peptone plasma" and was controverted by Halliburton and others. See Journal of Physiology, vol. IX, p. 270.

⁹ Brit. Med. Jour., vol. II, 1893, p. 682.

¹⁰ Hamlet, Act I., Sc. v.

Moreover, Professor A. E. Wright has proved that the addition of lymph to blood notably accelerates coagulation¹¹ and that the administration of chloride of calcium has a most marked effect in increasing the coagulability of the blood in the living subject.¹² Evidently, therefore, the chemical composition of the blood may have an important influence in diminishing or increasing the tendency to coagulation. Wooldridge¹³ showed that the injection of laky blood—i.e., blood in which the red corpuscles have been dissolved—gives rise to intravascular clotting and that the active agent is not, as used to be thought, the haemoglobin, but the stromata of the red corpuscles, the protoplasmic framework in whose meshes the haemoglobin is contained, and which is a complex proteid-*lecithin* compound. Wooldridge's work in relation to the chemistry of coagulation is extremely suggestive and although his conclusions are not all universally accepted his papers are well worth careful study. The chemistry of the blood is an investigation of extreme difficulty, because directly the blood is removed from the blood-vessels it undergoes important changes, so that it is difficult to reason from experiments in the laboratory to the vital chemistry of the living body. As Wooldridge said, "Genetically considered, both blood and endothelium are differentiations of one and the same protoplasmic mass. The blood is merely the more fluid central part of the originally solid protoplasmic cord. The blood and the vascular wall may then be looked upon as a protoplasmic unit. That the vascular wall exerts a great influence on the blood is evident from the fact that the blood undergoes changes which finally terminate in coagulation so soon as it leaves the vascular wall."¹⁴ Hunter said¹⁵: "It must be evident that the fluid state of the blood is connected with the living vessels, which is its natural situation, and with motion." And again: "While the blood is circulating it is subject to certain laws to which it is not subject when not circulating."¹⁶

Recent investigations show that the first stage in the formation of a thrombus is the accumulation and viscous change of the blood platelets, which adhere to each other and to the wall of the containing vessel; to these are soon added numerous leucocytes; fibrin ferment is set free and fibrin appears, entangling more or less of the red corpuscles. It is evident that this process will be favoured by a retardation of the blood stream, while, on the other hand, in the large arteries near the heart, where the current is powerful, small quantities of clot will be easily swept away and a thrombus less easily formed. This, moreover, is in accordance with clinical experience, for thrombosis is more common in veins than in arteries, and it is specially prone to occur in positions in which the circulation is apt to be impeded. Moreover, von Recklinghausen has directed attention to the manner in which thrombosis is favoured by the eddies produced in the blood stream by cross currents, irregularities of surface and variation in the size of the vessels, and by obstruction to the blood flow. Retardation or arrest of the blood current, although favouring the occurrence of thrombosis, is not in itself sufficient to cause it, for it has been shown by Baumgarten that healthy blood will remain fluid for weeks or months, though shut off from the circulation in a vessel between two carefully applied aseptic ligatures. But free circulation is necessary for the nutrition both of the blood and the vessels; slowing of the current, therefore, by diminishing the normal influence of the lining membrane of the vessels upon the blood cells and by lowering their vitality, may set free the fibrin ferment and thus lead to thrombosis. Eberth and Schimmelbusch,¹⁷ moreover, have observed that in the normal blood current the platelets travel with the red corpuscles in the axial stream, while the white cells move in the outer, slower stream. A slight retardation leads to an increase in the number of white cells in the outer zone but not to thrombosis; but on a further slowing of the current the platelets are found in the peripheral stream and in contact with the endothelium, and it is upon these collections of platelets that the fibrin is first deposited which is the commencement of a thrombus.

It would seem then that thrombosis may depend upon a variety of conditions and is usually due to a combination of

¹¹ Journal of Physiology, vol. xxviii, p. 514.

¹² Brit. Med. Jour., July 29th, 1893, p. 233, and July 14th, 1904, p. 57; THE LANCET, Oct. 14th, 1905, p. 1096.

¹³ The Chemistry of the Blood, p. 167.

¹⁴ Ibid., p. 180.

¹⁵ Treatise on the Blood, &c., p. 24, 1794.

¹⁶ Ibid., p. 851.

¹⁷ Virchow's Archiv., vol. ciii., p. 32.

several. Lesions and degeneration of the vessel walls, impaired nutrition of the endothelium, retardation of the blood current, changes in the composition of the blood and in the proportions of its formed elements, the invasion of micro-organisms,—any or all of these may play a part in the process, the predominant factor varying.

If the movement of the blood in a vessel is arrested, as by a ligature, the coagulum formed from the stagnating blood consists of fibrin, together with both red and white corpuscles, and resembles microscopically a clot formed in blood outside the vessels; it is of red colour and is spoken of as a *red thrombus*. If the thrombus is formed from blood in motion it is usually of a grey colour (the so-called *white thrombus*) and consists of fibrin, leucocytes, and blood platelets. A clot thus formed may, however, entangle a variable number of red corpuscles which will give to it a more or less red colour. The softening which occurs in the centre of these thrombi is due to the liquefaction of the blood plates. Such a thrombus starting in a vein from some point of injury or, as often happens, forming above the point of attachment of a valve, extends to a variable distance chiefly in the direction of the blood current. Thrombosis may be simultaneously of wide extent, or the process may spread gradually along the vessel towards the heart, obstructing long tracts of vein and giving rise to very extensive propagation of the thrombus. Extensive thrombi thus formed will present alternations of red and white thrombus. The original white thrombus extending across the vessel forms a barrier to the blood current, stagnation occurs as far as the next branch, and thus a red thrombus is added to the white; upon this the circulating blood deposits fresh white thrombus until stasis and coagulation again take place. A third variety of thrombus is the *hyaline* thrombus which consists of colourless, translucent, homogeneous material which stains after the manner of fibrin. This is found chiefly in the capillaries and small vessels and is usually associated with infective diseases. The small vessels of acutely inflamed tissues may be found obstructed by thrombi consisting almost entirely of polynuclear leucocytes; or, sometimes, as in hepatised lung, the vessels may be occupied by purely fibrinous coagula. But these are of *inflammatory* origin and of quite different significance to the thrombi above described.

If there is no infection of the blood a thrombus may become organised or it may undergo disintegration and be carried away in the blood stream without doing any harm.

The organisation of a thrombus is accomplished by the

FIG 1

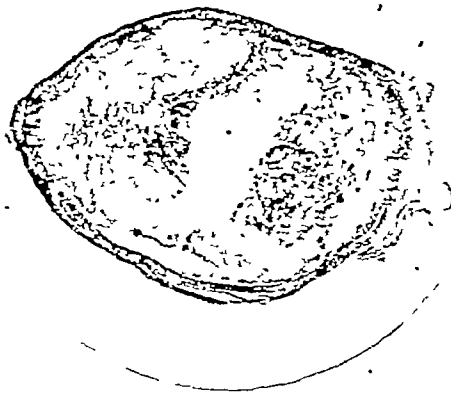


Obliterating arteritis. Showing coats of vessel much thickened and organising and adherent clot.

shrinking and cracking of the clot, into the fissures of which leucocytes pass from the vessel wall, and capillaries extend from the *vasa vasorum*. By this means the clot is gradually absorbed and its place taken by newly formed connective tissue which is adherent to the lining of the vessel and which, shrinking after the manner of scar tissue, becomes

less and less vascular until only a fibrous cord remains. (Fig. 1.) The thrombus thus organised may adhere in a layer of varying thickness to the vessel wall or may form a plug completely occluding the vessel, or a channel may be formed through its centre or between the clot and some part of the vessel wall, leaving the vessel with a diminished lumen. (Fig. 2.) If disintegration of a

FIG. 2.



Arterial thrombosis. Coats of artery not thickened but vessel containing adherent and channelled clot.

thrombus occurs softening begins in the centre or at the end of the clot and extends until the whole is broken up into a finely granular debris which is carried away in the circulating blood. This is a process which is frequently to be observed, especially in varicose veins, and does not usually give rise when the clot is not infective to any serious symptoms. But if the whole, or a considerable fragment, of a clot becomes dislodged and carried into the circulation dangerous embolism may occur with results that will be described later.

Softening commencing in the centre of a thrombus does not always lead to its complete disintegration but may result in the production of a thick greasy brown fluid completely shut in by the outer layers of the thrombus. The inclosed fluid somewhat resembling, and formerly mistaken for, pus consists of the granular and oily debris of the broken-down corpuscles coloured by blood pigment. Occasionally calcareous changes occur in thrombi giving rise to phleboliths—concretions consisting principally of phosphate of lime with about 20 per cent. of proteid matter and a little sulphate of lime and potash. Although sometimes met with in arterial thrombi they are found chiefly in the dilated pouches of the veins of the lower extremities and pelvis.¹⁹

In septic thrombi softening, disintegration, and true supuration may occur, and fragments of the infected thrombus are carried in the blood stream to distant parts, where as septic emboli they become centres of fresh infection.

In the heart thrombi form upon the inflamed valves, forming the vegetations of endocarditis. Thrombi are also found in the cavities of the heart, especially in the auricular appendices, sometimes attached and sometimes free, in the latter case giving origin to the so-called ball thrombi. Cardiac thrombosis, however, falls under the care of the physician, and I shall not further allude to it.

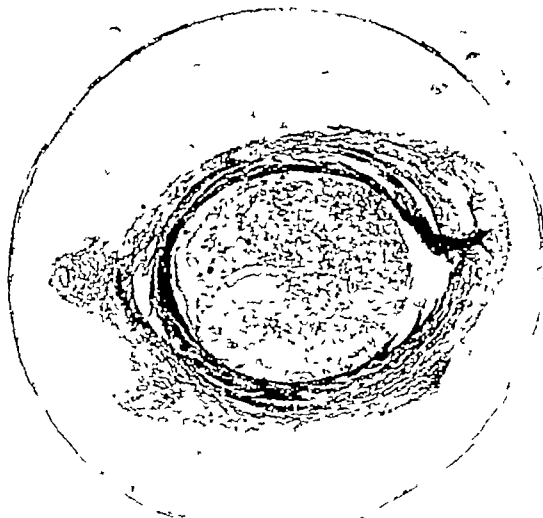
Arterial thrombosis.—This is met with in connexion with wounds, injuries, and degenerations of the arterial walls. It may occur gradually, as in aneurysms, or suddenly as a result of embolism or other mechanical obstruction to the

¹⁹ Dr. H. D. Rollerton has recorded an instance of numerous small phleboliths under the skin of both shins of a woman aged 50 years. The phleboliths formed discrete, hard, painless, movable nodules of the size of minute shot or less, they were not attached to the bone or to the skin, and they somewhat resembled the subcutaneous nodules seen in connexion with the acute rheumatism of childhood. See THE LANCET, Jan. 6th, 1905, p. 22.

blood current. It is also caused by chronic or acute arteritis, such as is seen in the course of syphilis and other infective diseases, and is occasionally met with in cases of anaemia and wasting diseases in which no changes in the arterial walls can be detected. In wounds and injuries of arteries the resulting thrombus is the result partly of mechanical obstruction to the blood stream owing to the projection into the lumen of the inner coat and partly of the interference with the normal influence of the intima. The same may be said of the application of a ligature. In the case also of atheromatous and other degenerations of the arterial coats and in aneurysms the destruction of the intima and the roughening of the inner surface of the vessel are largely concerned in the deposition of mural clot, but some retardation or irregularity in the blood current seems to be also necessary. In obliterating arteritis the obstruction of the vessel, though partly due to the arterial sclerosis, is also (as has been shown by Zoega-Manteuffel¹⁹) largely produced by the deposition and organisation of blood clot. (Fig. 3.) No doubt this condition is frequently due to syphilis, but it also occurs in the course of other infective diseases, as the specific fevers, rheumatism, influenza, and pneumonia. Rare instances are also recorded of arterial thrombosis in connexion with phthisis and Dr. Welch²⁰ describes a specimen showing a tuberculous focus in the intima of the aorta on which a thrombus has formed containing tubercle bacilli.

Besides these changes in the arterial walls, certain conditions of the blood, in combination with a slow and feeble circulation, will lead to coagulation in the arteries, as is seen in chlorosis, anaemia, and towards the end of exhausting diseases, but this is much less common than in the veins. Such a condition is illustrated by a specimen from the museum of St. George's Hospital (Series VI., 61 D) taken from the body of a woman, aged 37 years, who died from gangrene of the lower limbs. The specimen shows part of the aorta and the iliac arteries filled with old coagula adherent to the internal coat of the artery, but the coats of the vessels are not thickened (Fig. 2). The general tendency to thrombosis is shown by the fact that similar coagula were found in the main arterial trunks and in the

FIG. 3.



Obliterating arteritis. Posterior tibial artery. Coats slightly thickened but artery obstructed by clot.

veins of both lower limbs, in the iliac veins and lower part of the vena cava, in the arteries and veins of the left kidney, and in the left ventricle and right auricle of the heart. A specimen from a similar case is shown in Fig. 4.

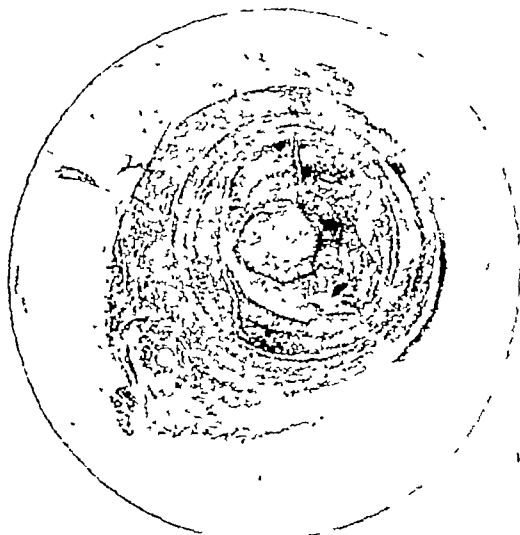
Thrombosis of arteries has been observed in connexion with various acute diseases, especially influenza, enteric fever, typhus fever, and pneumonia. Here, again, it is much less common than in the veins and is found chiefly in the arteries of the lower extremities. Cases have also been

recorded by Dr. Dickinson²¹ of death from rapid thrombosis of cerebral arteries in which there were no disease of the vessels and no acute illness. Mr. Jonathan Hutchinson²² has also recorded instances of the sudden occlusion of the femoral and other large arteries by thrombosis in which he could discover no evidence of disease of the vessels.

In septic conditions it has been observed that the blood platelets are abnormally numerous and a primary arterial thrombosis may occur to which the infection of the vascular wall is secondary.

Arterial thrombosis occurs most frequently in the lower limbs but does not exhibit the preference shown by the veins

FIG. 4.



Section of femoral artery from a female, aged 23 years, who died from extensive pulmonary artery thrombosis. The femoral artery full of clot; coats natural.

for the left side. The symptoms are chiefly those due to obstruction of the vessel and will depend very much upon whether this takes place rapidly or slowly and also upon the position and importance of the artery concerned. When the artery is rapidly blocked the symptoms resemble those of embolism, from which it is often impossible to distinguish them. When the thrombus is of gradual formation there may be sufficient opportunity for the development of a collateral circulation to prevent any serious results, though this will, of course, depend upon the condition of the arteries generally and their capacity to respond to the call upon their development. The gradual obliteration of an artery may only be recognisable by the increasing hardness and thickness of the vessel, its want of elasticity and the feebleness of its pulsation. There are often, however, some pain and tenderness felt in the course of the artery. When more rapid arterial thrombosis occurs there is usually acute pain and the artery is tender to pressure, the nutrition of the limb is seriously imperilled, and, as in embolism, unless a collateral circulation is soon established gangrene results. The danger of gangrene is less in the upper than in the lower extremities, but is greatly increased if the veins are also thrombosed, as in the case quoted.

Rapid obstruction of visceral and cerebral arteries is most often of embolic origin, although it may sometimes be due to thrombosis.²³ Mr. W. H. Brown has recorded a case of thrombosis of the abdominal aorta, iliac and femoral arteries, in which gangrene of the intestine occurred probably, I suppose, from thrombosis of the mesenteric artery.²⁴ Obstruction of the coronary arteries is commonly due to a combination of arterial degeneration and thrombosis, the sudden development of symptoms (as, e.g., angina pectoris) depending upon the rapid completion of obstruction by thrombus of a vessel already narrowed by thickening of its coats.

¹⁹ St. George's Hospital Reports, vol. i., 1886, p. 257.

²⁰ Archives of Surgery, vol. vii., p. 23, and vol. ix., p. 100.

²¹ See Dr. Dickinson's cases, St. George's Hospital Reports, vol. i., p. 257.

²² Transactions of the Clinical Society of London, vol. xxvi., p. 1.

¹⁹ Deutsche Zeitschrift für Chirurgie, 1888, vol. xiv., p. 461.

²⁰ Allbutt's System of Medicine, vol. vi., p. 196.

Thrombosis of the pulmonary arteries will be considered in connexion with venous thrombosis and pulmonary embolism.

Senile gangrene is usually caused by thrombosis of the small terminal arteries, the first symptom of which is often acute pain. Doubtless arterio-sclerosis and feeble circulation play an important part in its production and the mischief is often started by some slight injury or inflammation, but the thrombosis is the immediate cause. It is important to recognise this, because if the condition is seen and appreciated at its commencement the danger may be averted by appropriate treatment. The reason why thrombosis is not more common in connexion with arterio-sclerosis is that the heart is usually hypertrophied so that the arterial resistance is overcome by the increased heart power.

Venous thrombosis.—The conditions under which coagulation of the blood occurs in the living veins are very similar to those which lead to the formation of coagula in the arteries, but venous thrombosis is more common than arterial. It has already been pointed out that any impairment of the nutrition of the endothelium of the blood-vessels leads to the formation of thrombi upon the vessel wall, and such an impairment of nutrition occurs whenever the rapidity of the circulation is materially diminished for any length of time. "This," as pointed out by Dr. W. S. Lazarus-Barlow,²¹ "depends upon the fact that the intima, including the endothelial cells, unlike the rest of the vessel wall, derives its nutriment from the blood in the lumen of the vessel and not from that conveyed by vasa vasorum. In most cases a diminution in velocity of blood flow is the proximate cause of the thrombosis."

In wounds, injuries, and ligature of veins coagulation of the blood occurs, partly as a consequence of the mechanical disturbance of the blood flow and partly from the interference with the integrity of the endothelium. It occurs more readily than in wounds of arteries because of the slower and less forcible blood stream and perhaps also because of the greater coagulability of the venous blood.²²

Degeneration of the venous walls, dilatations and varices and anything producing obstruction or retardation of the blood current, are causes of thrombosis by disturbing the normal relations between the blood and the venous endothelium. Inflammation of veins is a common cause of thrombosis and owing to the thinness of the venous coats any surrounding inflammation invading the outer tunic of the vein is easily conveyed to the endothelium. This is one reason for the greater frequency of venous as compared with arterial thrombosis. The presence of micro-organisms either in the blood or the venous wall will give rise to thrombosis, as is frequently seen in septic inflammations. Venous thrombosis also frequently occurs in consequence of changes in the blood and in connexion with various acute and chronic diseases and in conditions of great debility.

When coagulation occurs in a living vein it is often difficult to say whether the thrombus is the cause or the result of phlebitis. If a vein is obstructed by a thrombus the nutrition of the endothelium at once suffers and if the clot contain micro-organisms they will soon invade the intima, the resistance of which will be already lowered and an endophlebitis will ensue. But, on the other hand, there are numerous cases in which it is certain that the changes in the vein precede the thrombosis; for instance, in the chronic inflammation which occurs in connexion with varix, in syphilitic endophlebitis, in tuberculous invasion of the vein, and in other degenerative changes. So also in septic inflammation spreading to the outer coat of a vein from a neighbouring focus invasion takes place from without inwards and thrombosis does not occur till the intima is reached.

The most serious of these conditions are those of septic origin. Here the presence of micro-organisms gives rise to coagulation and the clot has an infective character which it communicates to any part to which it is carried. The process may begin in inflammation of the outer coat of a vein originating in a septic or suppurating wound, or in an infective focus as in middle ear disease or acute necrosis of bone; this spreading to the inner coats leads to endophlebitis and consequent thrombosis. Or the organisms may invade the intima from the circulating blood or from an infected thrombus brought from a distant part. In these septic cases, whichever the mode of origin,

the coats of the vein are always found much thickened. (Fig. 5.)

Phlegmasia dolens is an example of septic phlebitis extending from the uterine veins through the iliac to the femoral and other veins. Thrombosis beginning in the uterine veins may extend from the uterus to the iliac and

FIG. 5.



Femoral vein. Infective phlebitis. Showing great thickening of coats of vein and disintegrating clot.

femoral veins and even to the vena cava. Sometimes, however, the phlebitis would appear to be the result of the transmission of infecting organisms by the blood and not of direct extension from the uterus. There is an admirable paper on phlegmasia dolens by Dr. David D. Davis in the Transactions of the Royal Medical and Chirurgical Society for 1823,²³ in which the author describes several cases of the affection and proves by dissection that its proximate cause is an inflammation and obstruction of "one or more of the principal veins within and in the immediate neighbourhood of the pelvis." But he did not trace the disease of the veins to its source in the uterus, though he recognised its connexion with parturition and with disease of the pelvic organs.²⁴ The paper is illustrated by beautiful coloured drawings showing the condition of the iliac veins and the contained clot.

You will remember also the notable papers by Dr. Robert Lee²⁵ on this subject communicated to the Royal Medical and Chirurgical Society in 1829 and 1853, in which he clearly demonstrated the pathology of the disease and showed that it occurred also in the male sex, and that in all cases the proximate cause is the same—namely, inflammation of the iliac and femoral veins. And in the volume of the Transactions of the Royal Medical and Chirurgical Society for 1853 is an elaborate paper by Dr. F. W. Mackenzie²⁶ on the Pathology of Obstructive Phlebitis, recording numerous experiments upon animals and an analysis of 100 cases of phlegmasia dolens in the human subject, from which he concludes that the obstruction and inflammation of the iliac and crural veins, which are the essential features of the disease, depend upon the presence of abnormal material in the blood.

Here, it will be observed, was a very close approach to the recognition of a microbic origin for the disease and it may be noticed that the important and accurate advance in the knowledge of the causation of phlegmasia dolens made by the three authors to whose work I have drawn attention was the result of laborious pathological investigation, of experiments upon animals, and of careful clinical observation, a striking contrast to the wild and unfounded theories which had previously prevailed.

Pylephlebitis is an example of suppurative inflammation and thrombosis of the portal vein originating in an infective

²¹ A Manual of General and Experimental Pathology, 1904, p. 117.
²² Woodbridge has shown that the plasma of peptonised blood which does not coagulate on the addition of fibrin ferment coagulates freely if in addition a stream of carbonic acid is passed through it.

²³ Transactions of the Royal Medical and Chirurgical Society, vol. xii, p. 419.

²⁴ Ibid., p. 445.

²⁵ Ibid., vol. xv, pp. 132, 362, and 221; and vol. xxxvi., p. 231.

²⁶ Ibid., vol. xxxvii., p. 170.

focus in some part of the area belonging to the branches of the vein. The most common origin is suppuration in connexion with the vermiform appendix, a point to be borne in mind in relation both to the diagnosis and treatment. The symptoms are often obscure but are chiefly suggestive of pyæmia. Rigors, fever of the remittent type, sweating, jaundice, and enlargement and tenderness of the liver would make the diagnosis probable, especially if there were evidence of intestinal disease, for which a careful search should be made.

In the light of recent investigations it seems probable that many of the so-called idiopathic or spontaneous thromboses are of microbic origin but there are some in which no micro-organisms can be found in the thrombi; while, on the other hand, bacterial invasion of the wall of a vein may occur without the formation of a thrombus.

Septic phlebitis is a condition attended by serious symptoms and grave danger. The severity of the symptoms will depend upon the virulence of the infection, the susceptibility of the individual, and the position of the mischief.

In the acute form of suppurative phlebitis the wall of the vein is invaded by pyogenic organisms, coagulation occurs in the inflamed vein, and the thrombus is itself infected and by its softening carries infection into the blood stream, giving rise to septicæmia and pyæmia. In this connexion I would remind you of the admirable paper communicated by Mr. Arnott to the Royal Medical and Chirurgical Society in 1828, in which he showed the relation between the primary and secondary affections in phlebitis.³¹ If a superficial vein is affected it is observed to be swollen and tender and the skin over it shows a red line. These conditions tend to spread rapidly along the vein in the direction of the blood stream. If a deep vein is attacked pain is felt in the part, soon followed by swelling, tenderness, and suppuration. The constitutional symptoms are severe; the temperature and pulse rise rapidly, rigors supervene followed by profuse sweating, the tongue is dry, appetite is lost, and there may be delirium. To these symptoms are soon added those of general pyæmia—rapid oscillations of temperature, rigors, sweating, and disseminated suppurations. Such cases usually end fatally, partly by the general poisoning of the blood and the consequent fever and exhaustion, and partly by the occurrence in important organs, especially the lungs, of centres of inflammation and suppuration. Chaucer described the condition very accurately in the *Knight's Tale* :—

"The clothed blood, for eny leche-craft,
Corruptith, and is in his bouk i-laft,
That nother reyne blood, ne ventusyng,
Ne drink of herbes may ben his helyng.
The vertu expulsiſ, or animal,
Fro thilke vertu cleped natural,
Ne may the venym voyde, ne expelle.
The typpes of his loungeſ gan to swelle,
And every lacerte in his brest adoun
Is sheent with venym and corrupcion.
Him geyneth nother, for to get his lyf,
Vomyt up-ward, ne doun-ward laxatif;
Al is to-broken thilke region;
Nature hath now no dominacioun.
And corteynly wher natur will not wiche,
Farwel phisik; go bere the man to chiroche."

When the infection is less virulent the symptoms are correspondingly less severe and many gradations are met with down to cases in which, though there is a well-marked phlebitis, the symptoms of infection are but slight. I have no doubt that some of the cases of so-called idiopathic phlebitis are of this nature. The infection may be of a low degree of virulence and the subject may have a high resisting power or immunity. Moreover, the infected thrombus may be isolated from the general circulation and so produce only local effects. In other cases the phlebitis may become manifest, while the source of the infection may be obscure. For instance, I have seen a case in which a slowly-forming ischio rectal abscess, accompanied by so little pain that the patient disregarded it, gave rise to a septic phlebitis accompanied by rigors, fever, and sweating, as well as by local symptoms.

In some cases of chronic pyæmia in which large superficial collections of pus occur indubitable evidence of thrombosis may be observed, and on opening the abscesses the pus is seen to be mixed with broken-down clot. In all cases of phlebitis it is therefore well to seek for a source of infection,

for in many instances in which the disease begins with but slight constitutional disturbance symptoms of severe infection subsequently develop. These symptoms probably arise coincidentally with the disintegration of the infected thrombus and the entrance into the blood stream of septic organisms. The successful treatment of such cases will of course depend very largely upon the removal of the focus of infection. Notable examples of this are the cases of chronic suppuration of the middle ear giving rise to endophlebitis and purulent thrombosis of the lateral sinus, in which life may be saved by ligature of the internal jugular vein and the thorough removal from the sinus of the infected clot. In other cases of phlebitis the focus of infection may be found in a deeply seated abscess, a suppurating wound, or an osteomyelitis, and the first essential in the treatment is the removal or disinfection of such focus. Abscesses must be freely opened and thoroughly cleansed and drained; suppurating or foul wounds must be disinfected; and bones the subject of osteomyelitis must be removed by resection or amputation. An accessible vein suspected to contain a septic clot should be ligatured above and below the thrombus and the portion between the ligatures excised.

Beyond these local measures the treatment must be adapted to the general condition of the patient. In the severe and advanced cases it will be that of pyæmia—quinine should be given in frequently repeated doses and the strength supported by appropriate food and stimulants. The exclusion of all insanitary conditions should be carefully looked into and the patient should be kept in a well-ventilated and light room and removed as soon as possible into fresh and healthy surroundings. He should not remain—

"In populous city pent
Where houses thick and sewers annoy the air,"

but should seek—

"Airs, vernal airs,
Breathing the smell of field and grove."

He should go where he can—

"Look into the fair
And open face of heaven,"

for pure air and sunshine are valuable aids to recovery and the high moorlands are often more beneficial than the sea coast.

LECTURE II.

Delivered on March 7th.

MR. PRESIDENT AND GENTLEMEN,—Leaving now the cases of undoubted septic origin we come to the consideration of a class in which the phlebitis is of quite different character and of which the dangers are of a quite different kind. Many of these undoubtedly depend upon changes in the blood which favour the occurrence of thrombosis, to which the phlebitis is secondary. It seems possible that in some of the diseases with which venous thrombosis is associated toxic or other chemical changes in the blood may affect the nutrition of the leucocytes and red corpuscles or favour the production and increase of the blood plates and thus, aided by an enfeebled circulation, lead to the formation of a thrombus.

Professor Osler³² has observed that in acute fevers the blood plates do not become more numerous in the early stage of the disease but increase in number as the patient becomes weaker and more debilitated. In typhoid fever, for instance, there is no increase during the first week but a notable increase in the third and fourth weeks. It will be observed that the increase in the number of the blood plates occurs just in that stage of disease which is especially liable to thrombosis. Dr. J. H. Pratt³³ of Boston has reported a series of observations on the relative number of the platelets in various diseases. There was a marked increase in chlorosis; the greatest diminution was observed in a case of purpura hemorrhagica. In other cases in which the slowness or feebleness of the circulation would seem to be the chief factor it is difficult to say how far the diminished nutrition of the vessel wall is the immediate cause of coagulation and how much is due to the invasion of micro-organisms.³⁴

³² Cartwright Lectures on the Physiology of the Blood Corpuscles, Medical News, 1888, p. 365.

³³ Johns Hopkins Hospital Bulletin, May, 1905, p. 201.

³⁴ Mr. W. O. C. Pakes has recorded the case of an anæmic and phthisical girl, 13 years of age, who was admitted to Guy's Hospital with thrombosis of the left iliac vein and swelling of the left lower limb. A thrombosis of the right iliac vein became swollen owing to thrombosis of week before death the right leg became swollen owing to thrombosis of the right iliac vein. Post mortem there were thrombi in both iliac

Thrombosis is a common occurrence in varicose veins and is usually the result of injury but in gouty persons the object of varix it is often seen in association with eczema when no injury can be traced. Coagulation is especially prone to occur in the cyst-like dilations and tortuous veins so frequently met with in the lower part of the thigh and the neighbourhood of the knee. Such varices are very liable to become inflamed because of their prominence on a part of the limb often exposed to injury and because in this situation they are particularly subject to irritation from pressure and friction, as in riding and other exercises. In varicocele also thrombosis is not infrequently caused by injury and in some cases the resulting obliteration of the vein produces a complete cure of the varicocele. In gouty persons it is more often the smaller nervous-like patches of varicose veins in the lower part of the leg or the muscular branches of the calf which are affected. Considering the frequency with which thrombosis occurs in varicose veins it is remarkable that it is comparatively seldom attended with serious symptoms. There is usually but little constitutional disturbance and the local discomfort is often but slight; the chief danger is of displacement of the clot and consequent embolism. This serious event is fortunately not of very common occurrence but it is a danger which ought always to be borne in mind in the treatment of such cases, particularly in those in which the blocked vein is near a joint or in direct communication with the main trunk, as, for instance, in the neighbourhood of the knee or of the saphenous opening.

Gouty phlebitis.—Since the publication in 1866 of Sir James Paget's well-known lecture gouty phlebitis has been a well-recognised disease. There can be no doubt that persons of gouty habit or ancestry are more than commonly liable to phlebitis and that in them the affection has usually certain distinguishing characters. To quote Sir James Paget's description: "Gouty phlebitis is far more frequent in the lower limbs than in any other part; but it is not limited to the limb that is, or has been, the seat of ordinary gout. It affects the superficial rather than the deep veins, and often occurs in patches, affecting (for example) on one day a short piece of a saphenous vein, and on the next day another piece of the same, or a corresponding piece of the opposite vein, or of a femoral vein. It shows herein an evident disposition towards being metastatic and symmetrical; characters which, I may remark by the way, are strongly in favour of the belief that the essential and primary disease is not a coagulation of the blood but an inflammation of portions of the venous walls."²² Sometimes it begins in the deep veins of the calf, the first symptom of which may be a sudden and acute cramp-like pain which is soon followed by deeply seated tenderness to pressure. There is a tendency to frequent recurrences of the attacks which are especially prone to occur when the patient is fatigued or below the usual standard of health. It is sometimes the only manifestation of gouty inheritance but is frequently combined with other obviously gouty symptoms. It is not usually attended with much constitutional disturbance.

An example of troublesome and frequently recurring phlebitis occurred in a patient from whom I had on two occasions removed uric acid calculi by lithotripsy. He lived most abstemiously and on a most carefully regulated diet but nevertheless had frequent attacks of phlebitis alternating with eczema, cystitis, and other symptoms of the uric acid diathesis. It seems to me, however, that it is the fashion at the present time to attribute many cases of phlebitis, as of other diseases, to gout or the uric-acid diathesis when there is no evidence whatever of either the presence or the inheritance of gout.

Phlebitis is sometimes seen in association with, or during

the convalescence from, acute rheumatism, but I do not think that this is sufficiently common to justify the inference that there is any special connexion between the two diseases.

Thrombosis is frequently met with during convalescence from *enteric fever* and is not uncommon in other conditions of exhaustion, such as result from prolonged or serious illness and in the late stages of phthisis. It occurs occasionally, but not often, in the acute stage of enteric fever.

Professor Wright and Dr. H. H. G. Knapp²³ have proved that the coagulability of the blood is diminished in the acute stage but increased in the convalescent stage of typhoid fever, the coagulation time being four and a half minutes in the convalescent stage, as compared with 20 minutes during the pyrexia. They show, moreover, that the blood of these convalescents is not only much more coagulable than the normal but it contains twice the normal amount of lime salts; whereas if the lime salts were brought within the normal limits the coagulability was reduced to even less than that of normal blood. The writers suggest that the increased coagulability of the blood of typhoid convalescents may be dependent upon an excess of lime salts and that this excess is derived from the milk, upon which typhoid patients are chiefly fed. Cow's milk, it is noted, contains 1 part in 600 of lime, as compared with 1 part in 800 contained in lime-water. The remedy indicated is the administration of citric acid as a decalcifying agent; and in seven patients, in all of whom the blood was found to be abnormally coagulable, it was observed that the administration of citric acid (36 grains three times a day) was followed by a decalcification of the blood and a corresponding diminution of its coagulability. It is suggested that, with a view to restrict the intake of lime salts the milk given might be partially decalcified and thus rendered more easily digestible and less constipating. This can be effected by adding to each pint of milk from 20 to 40 grains of citrate of soda. These valuable suggestions appear to me to be applicable to many other conditions besides typhoid fever.

Dr. W. W. Keen of Philadelphia,²⁴ in his work on "The Surgical Complications and Sequels of Typhoid Fever," collected 128 cases of venous thrombosis following fever. Of these "only four involved the upper extremity alone, two involved both the arm and leg, all the other 122 cases were limited to the lower extremities." He observes that, whereas arterial thrombosis occurs with almost equal frequency on the two sides of the body, two-thirds of the cases of venous thrombosis were on the left side and that both forms of thrombi, arterial and venous, "form most frequently during, or just after, the period of greatest cardiac weakness, a weakness felt most at such distant points as the legs." Of 148 cases, 58 occurred in the second and third weeks. The influence of the enfeebled circulation is also shown in the location of the thrombus. "The coagulation takes place at points mechanically favourable to slowing of the current—e.g., the bifurcation of arteries and the valves of the veins."²⁵ Dr. Keen also gives reasons for thinking that some at least of the cases of necrosis of bone following typhoid fever may be due to thrombosis of the arteries or veins.²⁶

Dr. Murchison recorded²⁷ a remarkable case in which during the course of a severe attack of *typhus fever* gangrene of both legs occurred in consequence of thrombosis of the iliac and femoral arteries and of the femoral and popliteal veins of the left limb. The patient, a woman, 45 years of age, died on the forty-first day of illness. Dr. Murchison points out that although there was gangrene of both legs there was swelling only of the left leg, in which the vein, as well as the artery, was obstructed. He also remarks that in the venous thrombosis occurring in connexion with fever it is almost invariably the left lower limb which is affected.

Chlorosis.—This is a disease in which it is well known that there is an especial liability to thrombosis. This depends, no doubt, upon the condition of the blood, in which there is a great diminution both in the number of red corpuscles and also of their contained hæmoglobin. The relatively greater number of white corpuscles in chlorosis and their slow movement along the walls of the blood-vessels are conditions

and femoral veins and in the thrombus of the left femoral vein, which was carefully excised and examined, was found the *trichinella proteus vulgaris*. Mr. Parker remarks that "in health the bactericidal power of the blood is probably sufficiently great to destroy this organism if it should gain access to it, but when from any cause this action is diminished the organism becomes relatively pathogenic. The bactericidal power may be reduced in many ways, of which a wasting disease and a *depression* are two." (Transactions of the Pathological Society of London, vol. xli, p. 47.) Dr. F. C. Turner has published a case of thrombosis of the iliac vein in a man, aged 25 years, who died from Hodgkin's disease, a condition in which there are important changes in the leucocytes, possibly due to micro-organisms. (Transactions of the Pathological Society of London, vol. xli, p. 344.)

²² Clinical Lectures and Essays, p. 223 (1878). See also Sir Prescott Hewett in presidential address to the Clinical Society (Transactions, vol. vi, p. 37) who relates cases of gouty phlebitis and points out that it often begins in the back of the leg, midway between the heel and the ham.

²³ On the Cause and Treatment of Thrombosis occurring in connexion with Typhoid Fever. Transactions of the Royal Medical and Chirurgical Society, vol. lxxviii, p. 1, 1893.

²⁴ The Surgical Complications and Sequels of Typhoid Fever. London, 1892, p. 741.

²⁵ Op. cit., p. 253.

²⁶ Op. cit., p. 111.

²⁷ Transactions of the Pathological Society of London, vol. xvi, p. 63.

favourable to the occurrence of thrombosis, as also is the increase in the number of platelets which has been observed. It would seem also that the chemical composition of the blood is altered, the potassium being diminished and the sodium and chlorine increased.⁴¹

Dr. Lee Dickinson⁴² pointed out that "the intra-vascular coagulation brought about by the injection of foreign substances (snake venom and nucleo-proteid) into the circulation of animals takes place by preference in the venous system and is greatly favoured by excess of carbonic acid in the blood. Chlorotic blood, by reason of its poverty in hæmoglobin, is certainly deficient in oxygen and probably equally overloaded with carbonic acid. The comparative infrequency of thrombosis in the cerebral sinuses, where the mechanical conditions seem so favourable, is perhaps explained by the observation of Dr. Leonard Hill that the blood obtained from the torcular Herophili contained far less carbonic acid than that from the femoral vein."

Professor Wright⁴³ has shown that an increase of the carbonic acid in the blood much increases its coagulability and he relates a case of hæmophilia in which hæmorrhage was arrested by the inhalation of carbonic acid gas. Chlorotic thrombosis is apt to be extensive and recurrent; when its seat is the cerebral sinuses it is a condition of extreme gravity; when affecting the extremities its chief danger is pulmonary embolism.

Thrombosis may occur in the condition of debility sequential to *influenza* as to other febrile diseases, but it is also not uncommon during the acute stage of the attack, when it is possibly due to the *influenza bacillus*. It is also sometimes associated with *pneumonia*. It has been observed that inflammatory exudations which are associated with the presence of the pneumococcus show a marked tendency to coagulate.⁴⁴

Peripheral thrombosis is a well-recognised complication of *appendicitis*. Notes of 1000 cases of operation for appendicitis at the London Hospital were furnished by Mr. Hugh Lett at the discussion at the Royal Medical and Chirurgical Society in February, 1905. Among these 1000 cases there were 12 of thrombosis of the veins of the lower extremities and one case of pulmonary embolism. Of 442 cases of operation for appendicitis at St. George's Hospital of which notes were furnished by Mr. Lawrence Jones for the same discussion nine had thrombosis of the lower limbs and three had pulmonary embolism. Of 863 cases reported by Dr. H. P. Hawkins of St. Thomas's Hospital there were two cases of thrombosis of the veins of the leg and two cases of pulmonary embolism. Mr. Aslett Baldwin reported 234 cases from the Middlesex Hospital with one case of pulmonary embolism and thrombosis of iliac veins. Mr. C. B. Lockwood of St. Bartholomew's Hospital contributed 200 cases with two cases of thrombosis of mesenteric veins and one case of thrombosis of the iliac vein. Mr. G. E. Gask reported 795 cases with five cases of venous thrombosis.

TABLE I.—Cases of Operation for Appendicitis showing number of Cases of thrombosis and of Pulmonary Embolism.

	Number of cases.	Thrombosis.	Pulmonary embolism.
London Hospital	1000	12	1
St. George's Hospital	442	9	3
St. Thomas's Hospital	863	2	2
Middlesex Hospital	234	1	1
St. Bartholomew's Hospital ...	795	5	—
Total	3334	29	7

Thrombosis is also met with in connexion with operations for gastric ulcer and other abdominal diseases. Of 50 cases of operation at St. George's Hospital for perforated gastric and duodenal ulcer recorded by Mr. T. Crisp English there were three cases of thrombosis, all of the veins of the left lower extremity.⁴⁵ Dr. A. H. Corder of Kansas has collected

232 cases of phlebitis following abdominal and pelvic operations. In 213 cases the left saphenous or femoral vein was affected. Dr. Corder asserts that phlebitis occurs in about 2 per cent. of all abdominal operations and is especially frequent after operations on patients anæmic from hæmorrhage, as, e.g., abdominal hysterectomies for bleeding fibroids.⁴⁶

There still remain a certain number of cases of thrombosis and phlebitis in which no association with any preceding disease or injury can be traced but which occur in apparently healthy individuals. This is the class usually spoken of as "idiopathic." In the light of recent researches and increasing facilities for the detection of micro-organisms it seems probable that some of these are really of infective origin, although the source of infection has not always been discovered. But there are others in which neither chemical nor pathological evidence of infection can be obtained and of which it must be admitted that the origin is obscure. Sir James Paget related two such cases.⁴⁷ In both of these the upper extremity was affected and the patients were healthy men. In the first case four inches of the axillary vein could be felt blocked. The arm was swollen and there were enlarged superficial veins over the upper part of the chest. Sir James Paget says: "No cause whatever could be traced for this condition; no injury or pressure; no known inheritance of disease; no disturbance of the general health, past or present." With the help of the hot douche, warmth, and friction recovery took place in the course of a year. In the second case the arm was in a similar condition and no cause for it could be discovered. "It was uncertain how long this state of the arm had existed; it had been observed only a week; its rate of increase was unknown." The patient remained in the same condition for a month and was then treated by leeching and mercury, after a fortnight of which he had an attack of scarlet fever, and while this was running its course all signs of the affection of the arm disappeared.⁴⁸ I will add another case.

A healthy man, 54 years of age, living a temperate and healthy but busy life, was suddenly seized with acute, cramp-like pain in the left calf. This was on the evening of a somewhat fatiguing day but no unusual exercise or exertion had been undertaken. The pain subsided after a few hours' rest but next day recurred, when walking and standing were somewhat painful. A careful examination revealed some deep-seated tenderness in the calf but no swelling. The patient showed no sign of illness, the temperature and pulse were natural, and the urine was clear and of normal acidity. He was not anæmic, he had never had any signs of gout, nor was he of gouty ancestry; he was not aware of having received any injury. Complete rest was prescribed, the patient was confined to bed, and the limb was covered with a layer of wool and lightly bandaged to a splint. Nevertheless the phlebitis spread upwards to the femoral vein with severe pain and moderate constitutional disturbance. Subsequently the right femoral vein was attacked and in the second week symptoms of pulmonary embolism occurred. The patient, after a tedious illness, gradually recovered. I have seen other analogous cases and I must admit that I cannot explain them.

A paper was published in 1905 on this class of cases by Dr. John Bradford Briggs of Washington.⁴⁹ He describes a variety of phlebitis affecting the veins of the extremities and occurring in the absence of all conditions that are commonly recognised as predisposing to inflammation of the veins. The condition occurs suddenly in persons apparently in perfectly good health and, without fever or other disturbance, leads to obliteration of the affected vein. It is apt to recur and to spread from the point at which the vein has previously become obstructed. Dr. Briggs quotes cases in which the saphena, the femoral, and the axillary veins were respectively the seat of the disease. He admits that the cases are "obscure alike in their pathology and in their remote and immediate etiology," but thinks that the affection is due to sclerosis of the veins and is concerned with the wall rather than with the contents of the vessel.

It will be observed that thrombosis occurring in connexion with fever, chlorosis, phthisis, and other debilitating diseases, after operations, and indeed whatever its cause, shows a

⁴¹ Biernacki: Wiener Medicinische Wochenschrift, 1893.

⁴² Transactions of the Clinical Society of London, vol. xxix., p. 63.

⁴³ Proceedings of the Royal Society, vol. lv., p. 231, and On Methods of Increasing and Diminishing the Coagulability of the Blood, Brit. Med. Jour., July 14th, 1894, p. 57.

⁴⁴ Lazarus-Barlow: Manual of Pathology, p. 197.

⁴⁵ Transactions of the Royal Medical and Chirurgical Society, vol. lxxviii., p. 27.

⁴⁶ Journal of the American Medical Association, Dec. 9th, 1905, p. 1792.

⁴⁷ Clinical Lectures and Essays, p. 305.

⁴⁸ Ibid., p. 307.

⁴⁹ On Recurring Phlebitis of Obscure Origin, Johns Hopkins Hospital Bulletin, June, 1905, p. 228.

curious preference for the left lower limb. The only reason for this preference which, so far as I know, has been suggested is the position of the left common iliac vein, the current in which may possibly be somewhat obstructed by the pressure of the right common iliac artery under which the vein passes. On looking carefully at the anatomy of the vessel I noticed that not only was the vein crossed by the right common iliac artery but also by the left internal iliac artery as it passes downwards to the sacro-sciatic foramen, both of the arteries crossing the vein almost at a right angle and in marked contrast to the relations on the other side. This may not seem a very strong reason for the great predominance of thrombosis in the left vein; yet if the blood is in a condition in which a slight retardation of the current would be sufficient to turn the balance towards coagulation this anatomical difference may be enough to determine the thrombus to the left side. It is possible also that the pressure of a loaded rectum may have some influence upon the venous circulation of the left side of the pelvis.

Thrombosis may, however, occur in the upper limb. I have related two cases of Sir James Paget. Sir Prescott Hewett⁵⁰ recorded a case in which after small-pox both axillary veins as well as both external iliac veins became permanently blocked. The patient, "an officer in a heavy cavalry regiment, was nevertheless able to remain in the service and efficiently to discharge his duties, for a vast collateral circulation had been developed and there was a mass of large tortuous veins spreading over the belly and chest."

I have seen thrombosis of the veins of the upper arm occurring in and associated with simple debility. Dr. F. C. Turner⁵¹ has recorded a case of thrombosis of the innominate, internal jugular, and subclavian veins occurring in an anæmic man, aged 44 years, who had suffered from severe hæmorrhage from a malignant ulcer of the stomach. There were much swelling of the arm, shoulder, and neck, and enlargement of the surface veins over the chest and upper arm. Dr. Wilberforce Smith has described⁵² an instance of a thrombus organised and adherent in the innominate and subclavian veins in a case of pulmonary phthisis. There was a cavity in the apex of the lung over which the pleura was thickened and the adjacent part of the subclavian vein was thickened and narrowed. Four weeks before death œdema and lividity of the arm appeared.

Besides these examples of thrombosis occurring in conditions which are of themselves of grave import, it is easily provoked in persons who are debilitated by over-fatigue, anxiety, starvation, or other depressing influences. Herein, although the debility is the predisposing cause, the immediate cause is most often some severe muscular effort and the thrombus starts in the strained or over-used muscle. Such is the origin of most of the cases of non-infective thrombosis of the upper limbs, a condition not very often met with.

Pulmonary embolism.—Pulmonary embolism may occur in any case of phlebitis or thrombosis in the course of slight as well as of severe attacks. The second and third weeks are the period most liable to this danger, which is not often met with after the sixth week. Nevertheless, fatal embolism may be produced by violence, such as a blow or severe pressure applied to a blocked vein, at much later periods. Dr. W. S. Playfair in a paper in the Transactions of the Pathological Society⁵³ collected 25 cases of thrombosis and embolism of the pulmonary artery occurring in women after delivery and pointed out that thrombosis occurs before the fourteenth day—often on the second or third day (15 cases); but that embolism does not occur until after the nineteenth day (7 cases).

The detachment of a large venous thrombus and its lodgment in the main trunk or in one of the chief divisions of the pulmonary artery may cause almost immediate death. This detachment of clot usually ensues upon some movement of the limb or of the body, some sudden change of posture, or some pressure upon a blocked vein. Thus sitting up in bed, which involves flexion at the groin, stooping, kneeling, or the movements concerned in leaving or returning to bed have often been the immediate cause of this disaster. Sudden and intense dyspnoea occurs with great pain in the chest, cyanosis, and feeble irregular pulse, followed directly or in a few minutes by death. When smaller branches of the pulmonary

artery are blocked the symptoms are less severe and either gradually increase and lead to a fatal end or may diminish and be followed by recovery. In other cases a localised pneumonia with hæmorrhagic expectoration may ensue. I have known this sequence of symptoms to recur several times with eventual recovery; but the condition is, of course, one of grave danger, demanding the most absolute quiet on the part of the patient.

Pulmonary thrombosis.—Obstruction of the pulmonary artery may also occur from thrombosis. It is probable that in some of the cases recorded as instances of pulmonary embolism the obstructing plug may have been formed *in situ* and have been really due to thrombosis. Dr. G. Newton Pitt⁵⁴ has collected 40 cases of thrombosis of the pulmonary artery out of 3218 necropsies at Guy's Hospital and gives reasons for thinking that the condition is of much more frequent occurrence than is usually supposed. In many cases the clot forms gradually and is situated in the smaller branches so that there are no sufficiently characteristic symptoms to enable a diagnosis to be made during life.⁵⁵ Sometimes, however, a thrombus may form in a large branch, giving rise to symptoms similar to those of embolism—severe and distressing dyspnoea, faintness, cyanosis, and great circulatory disturbance. These symptoms may subside and recur at varying intervals with each addition to the clot until at last the complete occlusion of the vessel brings about a fatal result. More rarely thrombosis of the main trunk or its primary divisions is a cause of sudden death.

Pulmonary thrombosis occurs under similar conditions to thrombosis of other arteries and veins, especially in feeble and cachectic states with lowered vitality and weak circulation, and although degeneration of the coats of the vessel is much less common in the pulmonary than in the other large arteries, yet such disease may be the starting point of a thrombus.

I have collected from the post-mortem records of St. George's Hospital for the last ten years, which include 2903 necropsies, the following cases of venous thrombosis. The list (Table II.) shows the relative frequency with which the veins were affected in fatal cases.

TABLE II.—Fatal Cases of Venous Thrombosis, showing the Veins affected.

Cases.	Cases.
Iliac veins 31	Superior mesenteric... .. 3
Inferior vena cava 15	Innominate 2
Lateral sinus 15	Subclavian 2
Femoral 12	Splenic 2
Internal jugular... .. 7	Renal 2
Saphenous 7	Ovarian 2
Hepatic 5	Inferior mesenteric 1
Cerebral cortex 4	Pelvic 1
Portal 3	Uterine 1

The following table (Table III.) shows the diseases in connexion with which the thrombosis occurred.

TABLE III.—Fatal Venous Thrombosis, giving the Diseases of Origin.

Cases.	Cases.
Middle-ear disease 12	Necrosis of femur 1
Cancer (various organs) 14	Ulceration of leg 1
Inflamed varix 6	Impacted tooth plate in œsophagus 1
Appendicitis 4	Gonorrhœa 1
Gastric ulcer 3	Lardaceous disease 1
Ovariectomy 3	Gall-stones 1
Abscess of liver 3	Renal calculus 1
Peritonitis 2	Cirrhosis of liver 1
Puerperal septicæmia 2	Pneumonia 1
Inflammation of uterus 2	Pancreatitis 1
Ulceration of bowel 2	Sclerosis of spinal cord 1
Heart disease 2	Suppuration of hip-joint... .. 1
Pleurisy 2	Fractured leg 1
Cystitis 1	Actinomycosis 1
Stricture and prostatic abscess* 1	Uterine hæmorrhage 1
Pyosalpinx 1	Operation for radical cure of hydrocele 1
Anæmia 1	Empyema 1
Phthisis 1	
Suppurating ovarian cyst 1	

* This was the only case in which gangrene occurred and there was thrombosis of the external iliac and femoral arteries as well as the femoral and profunda veins.

⁵⁰ Ibid., vol. xlv., p. 48.

⁵¹ Cf. Paget, Transactions of the Royal Medical and Chirurgical Society, vol. xxvii., p. 152, and vol. xxviii., p. 353, who shows "that a large and quickly increasing part of the pulmonary circulation may be arrested without immediate danger to life or any striking indication of what has happened."

⁵² Transactions of the Clinical Society of London, vol. vi., p. 37.

⁵³ Transactions of the Pathological Society of London, vol. xliii., p. 64.

⁵⁴ Ibid., vol. xliii., p. 64.

⁵⁵ Ibid., vol. xlviii., p. 62, and THE LANCET, 1857, vol. II., pp. 67, 93.

of tenderness, the vein may be felt solid with clot, and there is little or no cedema. If the intramuscular veins are implicated there will be more pain and some deep swelling, the limb feeling tight and heavy but showing little superficial cedema. If a main trunk is obstructed, as the femoral, there will be more general cedema and the limb may become tensely swollen. There may still be but little constitutional disturbance, and the chief danger to be apprehended is the detachment of clot. If the patient is kept at rest these symptoms may gradually subside, the circulation through the veins involved may become re-established and the limb after a time may completely regain its normal condition. But in many cases some of the affected veins are permanently obliterated, and when large trunks are involved they are often left with the walls thickened and lumen diminished by the adhesion and shrinking of organised clot. I have found some of the smaller veins of the calf blocked by firm adherent clot in cases where the limb appeared to have completely recovered from attacks of phlebitis. The veins of the lower extremity are much more often attacked than those of the upper limb and those of the left more often than those of the right limb; the disease begins very commonly in the deep veins of the left calf. In this class of cases there is not so great a liability to recurrence as in those of gouty origin. I have had the opportunity of observing several patients for varying periods up to ten years in whom there has been no recurrence after a severe first attack. A satisfactory subsidence and recovery is, however, not always the rule. The thrombus may extend in the direction of the blood current and so to the larger trunks, causing increasing embarrassment to the circulation. Thus from the femoral vein coagulation may spread through the iliac to the inferior vena cava, or from the veins of the neck and upper extremity to the superior vena cava, and thus to the heart. Professor G. M. Humphry described such cases with characteristic accuracy in a thesis on coagulation of the blood in the veins, published in 1859.⁴³ I have seen a case in which the thrombus extended as high as the renal vein and in which recovery took place but with permanent obstruction of part of the vena cava. When this occurs an enormous development of the superficial veins of the groin and abdominal wall usually takes place for carrying on the collateral circulation. A similar condition has been observed in connexion with obstruction of the superior vena cava, though this event is rare except in consequence of the pressure of intrathoracic tumours.

I exhibit a photograph showing the development of the superficial veins 21 years after obliteration of part of the inferior vena cava. In this patient it took about ten years for these veins to reach a troublesome degree of enlargement and it is only lately that the circulation has become completely compensated, so that now there is no difference in the size of the limbs at night and in the morning and the outline of the muscles is easily perceptible. Sir Thomas Watson,⁴⁴ in his lectures on the Principles and Practice of Physic, has described, in his inimitable manner, two cases illustrating the effects of obliteration of the vena cava and has given diagrams which show the collateral circulation. One of these was the case of a man who exhibited in a remarkable degree the results of obliteration of the superior vena cava by an aneurysm of the innominate artery. The diagram shows the means "whereby the blood descending from the head found its way at length through many circuitous channels to the heart." The second case related by Sir Thomas Watson was that of a woman in whom three inches of the inferior vena cava were obliterated by the pressure of a tumour of the liver, a great development of the superficial veins of the thorax and abdomen contributing to the collateral circulation. Sir Thomas Watson draws attention to the tortuosity of the veins in which the direction of the current is retrograde.

Mr. C. Mansell Moullin⁴⁵ has recorded a case of thrombosis of the inferior vena cava following a fall on the back and over-extension of the spine. The vein was obliterated from a point immediately below the entrance of the renal vein and the left common and external iliacs and the femoral vein were blocked. The right leg was scarcely cedematous; the left was six inches more in circumference, hard, brawny,

and severely ulcerated. The contrast between the two limbs was striking and showed that even when the inferior cava has been obliterated, if the other veins are not interfered with, a collateral circulation may be established quite sufficient for all ordinary purposes. But complete and permanent obstruction of the inferior vena cava may occur without any marked development of the superficial veins; as in a case examined at St. George's Hospital where the collateral circulation seemed to have been carried on almost entirely by the greatly enlarged azygos veins. The patient, a woman, aged 50 years, died from pneumonia and post mortem it was discovered that the inferior vena cava, from just above the entrance of the right renal vein to immediately below the entrance of the hepatic vein, had been converted into an impervious fibrous cord. The azygos veins were greatly dilated and tortuous, but the veins of the surface of the body were not dilated or prominent.⁴¹ Dissections of similar conditions in cases of obliteration of the vena cava were described many years ago by Dr. Matthew Baillie⁴² and by Mr. Wilson.⁴³ Uncomplicated peripheral venous thrombosis does not cause gangrene. When this does occur it is in consequence of arterial as well as venous obstruction or else of the addition of inflammatory disturbance.

The Milroy Lectures

OR

EPIDEMIC DISEASE IN ENGLAND—THE EVIDENCE OF VARIABILITY AND OF PERSISTENCY OF TYPE.

Delivered before the Royal College of Physicians of London on March 1st, 6th, and 8th, 1906.

By W. H. HAMER, M.A., M.D. CANTAB.,
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LECTURE II.¹

Delivered on March 6th.

MR. PRESIDENT AND GENTLEMEN,—Creighton gives the earliest clear reference to influenza in these islands at 1173, when there was an evil and unheard-of cough ("tussis mala et inaudita") at Melrose, while in this same year a certain dean of St. Paul's travelling on the continent found the whole world "infected by a nebulous corruption of the air causing catarrh of the stomach and a general cough."²

There can be no room for doubt as to the character of the coqueluche of 1510 whatever be thought of the five "sweats" already discussed or of agues (such as the "hot agues of 1540") occurring during the first half of the sixteenth century. In 1557-58 occurred the epidemic which Dr. John Jones ("Dyall of Agnes") compared to the true sweat of 1551; it was "a new burning ague," and "one-third part of the population taste the general sickness." In 1562 there was an outbreak of the "new acquaintance." Mary Queen of Scots was attacked by it in Edinburgh in this year. In 1580 the "gentle correction" appeared, and in 1598-99 there was prevalence of a malady which was in all probability influenza. Fuller describes the "ague" of 1558 as "a dainty mouthed disease which passing by poor people fed generally on principal persons of greatest wealth and estate," and, indeed, "ague" may now be said to have replaced the formerly fashionable "sweat."

"Influenza" seems to have been first applied to an epidemic in Italy, in 1729; at any rate, it is introduced in an account of that outbreak given in a London periodical in 1830. The word first appeared in England in 1743 but did not

⁴¹ Post-mortem and Case Book, 1896, No. 145.

⁴² Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge, vol. 1, p. 127 plate 1.

⁴³ Ibid., vol. III, p. 63. See also Dr. Peacock in the Transactions of the Royal Medical and Chirurgical Society, vol. xxviii., p. 1, on Thrombosis of the Vena Cava Superior, with reference to other published cases.

¹ Lecture I. was published in THE LANCET of March 3rd, 1906, p. 569.

² Some suspicion attaches, Creighton thinks, to a "rheumy infirmity" at St. Albans in 1427 and to the "pestilentialia volatilis" recorded by Fordoun in Scotland in 1450 and 1452.

⁴⁴ On Coagulation of the Blood in the Venous System during Life. George Murray Humphry, M.D., F.R.S. Macmillan, Cambridge, 1859.

⁴⁵ Lectures on the Principles and Practice of Physic, vol. II., p. 250, 1857.

See Clinical Society of London, vol. xvii., p. 115.

come into common use until the beginning of the nineteenth century. In the seventeenth century influenza was, says Creighton, variously designated "new disease," "new ague," "strange fever," "new delight," "jolly rant," "great cold," "unusual cold," "unusual transient fever," &c.; in the eighteenth century "catarrh" was commonly applied to it. As Robert Boyle says: "The term new disease is much abused by the vulgar, who are wont to give that title to almost every fever that in autumn especially varies a little in its symptoms or other circumstances from the fever of the foregoing year or season."

Catarrh is said to have prevailed throughout Europe in 1610; there was a "new disease" in 1612-13 and also in 1623-24; a "harvest ague" in 1625; a "new disease" in 1638-39 which was accompanied by a "harvest ague"; and a "new disease" again in 1643-44 and in 1651. In 1657-59 one, perhaps two, catarrhal epidemics prevailed, forming part of an outbreak of "new disease." In 1675 there was a universal cold. Evelyn notes (Oct. 15th): "I got an extreme cold such as was afterwards so epidemical as not only to afflict us in this island but was rife over all Europe like a plague." Sydenham gives a chapter to the "epidemic coughs of the year 1675 with pleurisies and pneumonias supervening." The "severe and violent cough" of 1675 was known in the north of England "profanely" by the name "jolly rant." The winter outbreak of 1679 stands out particularly clearly in contemporary records. Sydenham says that 1678-80 were years of "epidemic agues" or "new disease." The agues were tertians or quotidian or duplex forms of these—after two or three intermissions they were apt to become continual fevers. Moreover, at this time a morbus epidemicus, or febris epidemica, was prevailing in Holland and Belgium.

A noteworthy feature in influenza is the frequent coincident affection of animals. The universal sickness of the Siege of Troy has been held to have been influenza because it began upon the horses and the dogs. A London letter of 1658 states: "There is a great dearth of coach horses almost in every place and it is come into our fields." Again, the characteristic rise of mortality in London in 1688 with its accompanying "new disease," was preceded by a slight but universal horse cold and numerous similar occurrences are recorded in the following century.

An account of the "short sort of fever" of 1688 comes from Dublin. Patients experienced "a deep pain in their heads chiefly about the eyes, with unsettled pains in their limbs and about the small of their back, a soreness all over their flesh." Mention is also made of sweating. Such references occur again and again. Willis noted that the epidemic of 1658 was "wont to be cured within a few days by sweat." There was a universal cold in 1693 which "terminated in a critical diaphoresis" (Molyneux). Short, too, speaks of "the sweat" which was "the general crisis" of the disease and alludes to sweating in the outbreak of 1710. In that year and in 1713 there is mention of the "Dunkirk rant," brought over, according to Mead, by troops returning from the continent, a mild fever with pains in the head, which went off easily "in large sweats after a day's confinement."

In 1712 there is mention of a "new ague" and about this time the term "la grippe" came into use. In 1727-29 there was a constitution of agues and other fevers, in the midst of which occurred horse colds and epidemic catarrhs affecting human beings—a writer on one of the latter in 1729 refers to the "profuse sweats."

The great influenzas of the eighteenth century were those of 1733, 1737, and 1743. The first was a widespread fever with catarrhal symptoms and "the sick were in a general way much given to sweats" (Huxham); it was preceded by a disease of horses. The outbreak of 1737 was also preceded by a horse epizootic, sweats occurred as before, and "after the fever was totally gone there often remained obstinate rheumatic pains" (Huxham). The epidemic of 1743 is that referred to by a writer in the *Gentleman's Magazine* as "the disease called influenza in Italy." Horace Walpole dubs it the "blue plagues" and says whole families were attacked. Huxham says: "The greater part by far of the sick had easy, equal, and kindly sweats the second and third day."

Between 1743 and 1762 there was no universal cold but localised influenzas occurred, associated in Scotland (1758), in Dublin (1750-52), and in England (1760) with horse colds. In the great influenza of 1762 perspiration was "a constant symptom" (Baker). Heberden describes an epidemical cold in 1767. Fothergill notes that horses and dogs were attacked in 1775 and mentions that servants, "especially the men who were most abroad," suffered from influenza in that year.

References to "a crisis by sweat after a few days" (Fothergill); "sweats which came on spontaneously" (Haygarth); "considerable sweats" (White); "a plentiful easy sweat" (Glass); and "warm copious sweats" (Reynolds) occur in connexion with this epidemic. Glass's account is particularly interesting; he refers to attacks in institutions; he speaks of "a spontaneous sweat being the natural remedy of the fever"; he even uses the identical expression, "a Diary fever" applied by Caisus to the sweating sickness of 1551; finally, he refers to horses and dogs being attacked, as do Haygarth and Pulteney also. In 1782 there came a "wave of catarrhal fevers" in the midst of a "great constitution of epidemic agues"; Gray says the disease came from Moscow and St. Petersburg, possibly from China, and a similar disorder prevailed in the East Indies. He and others refer to perspirations and Carmichael Smith remarks, it "might very properly have been named the sweating sickness as sweating was the natural and spontaneous solution of it."

During the years 1780-85 dog and horse outbreaks occurred, and in a "partial influenza" of 1788 dogs, horses, and cattle suffered. A remark made by Warren of Boston concerning the latter part of the epidemic of 1789-90 in that city is worthy of attention. "The sweats with which this disease terminated," he says, "were by no means so profuse as in the (preceding) autumnal epidemic." He even suspects he may be dealing with a new disease.⁴ He is troubled at its sudden return in his city, observing that "the periods of 1510, 1557, 1580, 1587 and 1591, 1709, 1732 and 1733, 1743, 1762, 1767, 1775 and 1782 are much more distant" (i.e., than from fall to spring, as in Boston).

Coming now to the nineteenth century, in the influenza of 1803 mention is made of "a gentle sweat in recovering after about a week less or more."⁵ Burne speaks of perspirations in 1831, and there are in that epidemic, as also in 1803, numerous references to disease in horses and other animals. The influenza of 1833 was mild, the symptoms "going off with a sweat in the night"; "perspirations and soreness pervaded the skin" (Hingeston), but "the perspiration was not critical."⁶ This epidemic was followed by minor catarrhal attacks and then by the sudden, simultaneous, universal influenza of 1837—again followed by smaller outbreaks, culminating in that of 1847-48. The "tendency to perspiration," and in certain places to "local rheumatic neuralgia" as a sequela (Streeten), and to "profuse perspiration" (Bryson) was noted in 1837. The epidemic of 1847-48 fell largely on the richer classes and deaths in considerable numbers occurred as late even as 1855.

Influenza in the past has thus been emphatically a sweating sickness and this feature is apparent enough in modern descriptions of the disease. Bruce Low in Parsons' report speaks of "profuse perspiration"; Leichtenstern says that hyperidrosis is "an important symptom," and talks of "profuse sweats" and "extensive military eruptions"; Goodhart remarks that "a common and characteristic symptom at any rate after two or three days have passed is the occurrence of drenching sweats"; Hood⁷ refers to copious perspirations as valuable aids to diagnosis. It may be that as many recent prevalences of influenza have fallen in winter time sweating has been thrown rather into the background. The five English sweats occurred in summer and in the summer outbreak of 1891 sweating was unquestionably a prominent symptom (see Bruce Low on Influenza in Derbyshire in 1891—Parsons' report).⁸

³ Gray's references to Macqueen's observations are noteworthy—for example, the sudden involvement of a ship's company in the case of the *Fly* sloop of war; his beliefs that the disease is "communicated by human effluvia and not by any matter generated in the atmosphere alone"; and that it occurs "ten or twelve times in the course of a century, at no regular or certain periods"; his mention of "bold sweats"; and his confirmation of the account now so familiar of the "strangers' cold" of St. Kilda.

⁴ In the observations by the College of Physicians on this epidemic there occurs the passage "Nor was spontaneous and profuse sweating so general a symptom of the last influenza as it was of that of the year 1762."

⁵ The *Memoria of the Medical Society of London* (vol. vi, pp. 359-361, p. 278, p. 399), and Pearson, Carrick, Falconer, and Nelson Scott all speak of sweats or perspirations.

⁶ In this outbreak horses were attacked (Youatt), and the rich mainly suffered, the symptoms being those of catarrh, "ending in a sweat of two or three days with the usual head pains," and the like. Later the symptoms became those of a more "adynamic" illness.

⁷ THE LANCET, Dec. 30th, 1905, p. 1831.

⁸ Sweating was not invariable in the fifteenth century. To those who did not sweat "a flour of mace with warm beer (was) given and then they sweat." Hecker says: "One form of this disease appeared that was wanting in precisely that symptom that was most essential—namely, the colluvative sweating."

On other features common to dengue and influenza, the relapses* for example, more might be said, but of chief importance is the close epidemiological resemblance of the two maladies. Writing of influenza Creighton says: "What kind of infection can that be which has befallen men on both sides of the Alps within the same short time, in the twelfth century as in the nineteenth," which has "lasted unchanged through so many mutations of things, from mediæval to modern, and from modern to ultramodern." The English sweat, too, he finds was "volatile in its manner of travelling, like dengue, influenza, and others of the "posting fevers of former times," yet, as we have seen, he does not admit the identity of the fifteenth and nineteenth century sweats but accepts a strange theory which has had a remarkable vogue, and reference to which will serve as an introduction to other members of the sweat family.

Popular rumour is said, by Creighton, to have associated the original outbreak of English sweat with the arrival of Henry VII.'s mercenaries in England. Forrester says that the disease "first unfurled its banners in the City of London on the 19th September." There is, however, an entry in the *Croyland Chronicle* which suggests that the sickness may have been present before the mercenaries arrived, for Lord Stanley is reported to have excused his non-appearance at Bosworth Field on August 22nd because he was suffering from the sweating sickness. There is nothing to show that the mercenaries were even ill and, as Creighton remarks, Hecker has passed "clean into the region of conjecture in assuming sweat had prevailed among them." It was pointed out, however, in the *Quarterly Review* of January, 1837, that the nationality of the mercenaries might be regarded as affording confirmatory evidence. They are stated in Hall's *Chronicle* to have been "a scum of Bretagne" but Creighton gives reasons for concluding that they were Normans and then adds that in the early part of the eighteenth century "an almost identical type of disease began to show itself among the villages and towns of that very region of France, the lower basin of the Seine, where the mercenaries of 1485 had been recruited." Hecker had already pointedly called attention to the similarity between the Picardy and English sweats but the former he considered could not "have proceeded from the English sweating sickness... a whole century... and what vast national revolutions" having intervened. He, moreover, laid stress on the "similarity and isolation of all the five epidemic sweating fevers... and the absence of all transitional forms of any duration, which certainly would have existed had Nature intended gradually to form a miliary fever out of the English sweating sickness." Creighton, however, cites instances of spread of disease among strangers by healthy persons and holds that the English sweat "had a real relation to the seats of the Norman and Picardy sweat."¹¹ He goes further and argues that sweats are coil diseases and in this finds explanation of the "clear intervals of many years" and "sudden bursting forth anew" he adds, "What became of the specific virus from 1485 to 1503, to 1517, to 1523, to 1551 and after!"

Two facts appear to deserve mention here: first, communication with the continent was to a far larger extent limited to the summer months in the fifteenth and sixteenth centuries than is now the case and each of the five recorded outbreaks of sweating sickness, as a matter of fact, occurred in summer; second, the great trade relations of Tudor times were with the Hanse towns.¹²

It will be remembered that when the fourth sweating

sickness of 1523-29 invaded the continent these very towns were specially attacked, and having in view the subsequent behaviour of influenza—in 1729, 1732, 1742, 1781, 1788, 1799, 1833, and 1839 it advanced upon Europe from the furthermost parts of Russia—it may be surmised that it was from the Baltic that the English sweating sickness came. Great interest none the less attaches to the sweating sicknesses of Europe, among which this Picardy sweat has received special attention. Hirsch has fully discussed the confusion engendered in the seventeenth and eighteenth centuries by selection of a variable exanthem, presenting itself as a symptom in numerous maladies, for designation as a disease entity. Hoppe and Welsch described a miliary eruption in a disease of puerperal women—doubtless the present-day puerperal scarlet fever—and inasmuch as this "childbed purples" was associated with sudamina it became the fashion to describe all maladies in which sudamina occurred as "purples." Puerperal fever and rheumatic fever, says Immermann, were doubtless often thus designated, and to these may probably be added influenza, cerebro-spinal fever, relapsing fever, and other diseases. Both Hirsch and Immermann emphasise the unreliability of the early records, but Hirsch, following Hecker, collected particulars concerning 194 outbreaks of "suette miliary" occurring between 1718 and 1874 in Picardy and elsewhere, and the existence of a disease species standing out from behind all the "friesels" and "purples" of the older writers has become quite an accepted doctrine. Now the accounts given of the Picardy sweat are, to a large extent, open to the criticisms which Hirsch and Immermann direct against seventeenth and eighteenth century "friesels" and "sweats" generally. Hecker selects "one of the most ancient" (Abbeville, 1733), and also "one of the most recent" (Oise and Seine et Oise, 1821), and concludes, from the accounts given, that "the miliary fevers, which have appeared in France in recent times, do not differ in any essential point from those of more ancient date." The two descriptions relied upon are, however, far from being convincing in regard to this matter, and it would appear probable that some of the outbreaks included in Hirsch's catalogue were really typhus fever, possibly associated with relapsing fever, notably that in Languedoc in 1762 (with its strange exanthem described by Pajol) which in a few months carried off 30,000 people; some again were presumably relapsing fever (for example, the London outbreak of 1741); a number were almost unquestionably influenza (Arbutnot says the influenza epidemic of 1733 ended "in miliary eruptions" in France); others finally may have been cerebro-spinal fever.

A study of Hirsch's table shows that 90 per cent. of the outbreaks from 1718 to 1832 were practically confined to Picardy and its near neighbourhood, whereas from 1833 onwards they range far more widely over France. Hirsch writes as if there was little doubt as to the identity of the outbreaks which he describes, but Rayer, from whom he takes his information (his tables are lifted *en bloc* from Rayer's book), speaks with much diffidence on this subject.¹³

Reference to English records shows that relapsing fever first began to make its mark about the time when the Picardy sweat appeared. Creighton refers to a supposed case in London in 1710 to the outbreak of 1727-29 in which sudamina are described, to cases in Edinburgh in 1735 accompanied by large plentiful sweats, and to Rutty's cases in Ireland in 1746 with miliary pustules and relapses. Indeed, in England between 1750 and 1760 there arose a controversy "as to whether there was in reality a distinctive kind of fever marked by miliary eruption," some contending that the phenomena were caused by the mode of treatment, others arguing, as did Rayer and the historians of the Picardy sweat, that "miliary fever was a natural form." Dr. Fordyce in 1758 wrote his "History of a Miliary Fever" and Ormerod described the relapsing fever of 1847 under the same name. With all this it may be borne in mind that the

* In the sweating sickness sufferers are said to have presented "repetition of the disease even to the twelfth time."

¹¹ Having in view the fact that the Picardy sweat was by no means confined to Picardy it seems useful to labour the question of the origin of the mercenaries. There is no evidence that the Picardy sweat existed in the fifteenth century, the records commencing in 1715. Oddly enough, according to the chronicles, when the English sweat overran the continent it avoided France.

¹² As Creighton says "While the Portuguese and Spaniards were navigating in tropical waters the English and French were sending troops of their expeditions to the North," or to quote another authority "English commerce was chiefly carried on by means of the English Channel as the German Ocean and the maritime enterprise which English seamen naturally emulated was not that of the Italian Republics of the Hanse towns." In Hakluyt's *Voyages* there is an account of "The Discovery of Norway" in 1553, entitling by Sir Hugh Willoughby and performed by Richard Chancellor. Many years before, this trade with the Hanse towns had reached its climax. "Lord Norwiche the Great," as the most easterly Hanseatic municipality styled itself, was in the fourteenth century a city with 50,000 inhabitants, the territory under the control or influence of which stretched from the White Sea to Lithuania and from the Gulf of Finland to the prime policy of Vladimir.

¹³ Indeed, he says "L'expression 'suette miliary' a été employée pour désigner des maladies si différentes qu'il y a véritablement des épidémies qui n'ont de commun que les titres des ouvrages où elles sont décrites." Furthermore, he translates from Rayer's account, that with regard to many of the outbreaks he had no information beyond the fact that suette miliary was reported to have occurred at the place in question. Again, his report shows that in many instances where only a particular village or commune is mentioned the disease was really fairly widespread. Thus, under *Epidémie de Suette à Frenouex (1755)* we read "A la même époque la suette miliary épidémia dans les environs de Paris, à Meaux, Villeneuve-St. Georges, dans le Vexin français et normand" (p. 43); again, Paris, attacked in 1747 (p. 44); Orleans, and the environs of Paris also, in 1733 (p. 44).

scene of Marlborough's wars was largely laid in Flanders; Ramillies, Oudenarde, and Malplaquet lie just north of Picardy and upon Picardy the French armies must have been largely dependent for supplies. Guizot writes that in 1708 "the destitution in France was fearful," and again when peace was concluded at Utrecht he says, "The peasantry were reduced to browse upon the grass in the roads and to tear the bark off the trees and eat it." Carlyle tells how (in the years when the "sweat" prevailed in Picardy) Paris was cleared out periodically by the police, "and the horde of hunger-stricken vagabonds sent wandering over space for a time." Here was scope for famine fever truly, and there can be little doubt that many of the early Picardy sweats were of that nature. The descriptions given by Rayer do not, it is true, correspond with those of nineteenth century authors in that the critical sweat seems, as a rule, to have appeared earlier than the fifth day and the relapse (when noted) earlier than the fourteenth. Koch, however, in recently describing relapsing fever in East Africa comments upon the short duration of each attack.¹³

When influenza left Europe in the "fifties" Picardy sweat disappeared also. There were sporadic prevalences in the "sixties," including a more extensive one in 1866 and a few in the early "seventies." In 1867, however, a very aberrant or bizarre form of Picardy sweat, as the French authorities say, appeared in Poitou, of which more anon.¹⁴

Hecker includes among sweating sicknesses the "cardiac disease" of the ancients and the Roettingen sweating sickness. The former it seems was compared by Houlter to the English sweat, and later writers feel therefore under obligation to refer to it. The full description given by Hecker suggests that it was a kind of olla-podrida of disease, and of its epidemiological features nothing is known. On coming to the Roettingen sweating sickness of November, 1802, we may clearly claim to be on familiar ground. In this little community of about 250 country people, living in a village surrounded by mountains some 20 miles south of Würzburg, "strong vigorous young men" were suddenly seized with "unspeakable dread" and developed "profuse, sour, ill-smelling perspiration," with "lacerating pain in the nape of the neck," while "in most cases all this occurred within 24 hours."¹⁵ Now when Roettingen was thus attacked influenza, according to Hirsch, was prevailing in Germany; accounts are forthcoming from five localities only (Frankfort-on-Main, Cologne, Mayence, and Hanau in February; and later in April, Paderborn), and, curiously enough, three of the five are in the neighbourhood of Roettingen. To demand, therefore, as Hecker does, that the "mist-born spectre" of 1529 should be newly "drawn from the clouds into the midst of Germany" is entirely superfluous.¹⁶ He writes, however, "We do not hesitate to pronounce the Roettingen fever to have been the same disease as the English sweating sickness"; and here we

may agree with him, adding the conviction that both were influenza."¹⁷

There now remains to be considered yet another sweating sickness, a malady, too, of the "posting" character—viz. dengue.¹⁸ In Paris on the outbreak of influenza in 1889 an animated discussion arose as to whether influenza or dengue was in question.¹⁹ De Brun of Beyrouth had described the latter as it occurred in the Levant and the manner in which it was "continuous" in south-eastern Europe "with the succeeding influenza." His memoirs came under discussion when Paris was attacked by influenza and the question as to the relationship of the maladies was naturally raised. Rouvier in his "Identité de la Dengue et de la Grippe Influenza," has strongly maintained the two diseases are one and the same. Ringwood says that he observed dengue (introduced from Egypt by troops in 1885) at Kells and watched it gradually becoming merged into the influenza of 1890; he considers that his neighbourhood for five years suffered from "influenza complicated by dengue, or dengue with modified cases which are commonly called influenza"; and he adds, when dengue "is widespread over tropical countries the British Isles are visited by so-called influenza, which I maintain is dengue." Again, Dabney gives an account of an epidemic resembling dengue which prevailed in and around Charlottesville and the University of Virginia in 1888 and there is a notable account by Godding of an "obscure outbreak of dengue" on the *Agamemnon* in the Indian Ocean in 1889, with the remarkable postscript: "Since writing the above H.M.S. *Agamemnon* has returned to Malta, where influenza has been rife. The crew of this ship have suffered much less up to the present than any of the other ships. Has the dengue protected us?"

Very interesting, too, are the Queensland outbreaks of dengue of 1897-98 and 1905. The resemblance of the pains to those of influenza, the absence of some of the symptoms usually regarded as characteristic of dengue, and the conviction expressed by some observers that the disease was "that we call influenza in England" are especially noteworthy. Once more there may be cited the recent dengue outbreaks in the East Indies described by Stedman in 1902; some of the cases would have been thought to be influenza "had it not been for the prevalent epidemic of dengue." Note may also be made of the dengue with coryza and "at times catarrh of the throat and trachea" at Hong-Kong in 1895. Finally, the testimony of Domenichetti referred to by Parsons may be adduced. Against all this must be set the evidence quoted by Leichtenstern and Parsons. The former cites Zülzer, von Düring, and Skottowe, the latter Sandwith and Limarkis—all observers who had seen both diseases. Leichtenstern's witnesses deal with the epidemiological side of the question and will be referred to later. Sandwith and Limarkis lay stress on clinical distinctions. It may be noted, *inter alia*, that the former considers the dengue of Egypt to be less severe than that of India, Aden, and the United States, and says "there are many varieties of dengue," and notes it resembles influenza in that "epidemics differ from previous outbreaks"; while he and Limarkis agree that convalescence from "influenza" is usually rapid.

The clinical differences upon which emphasis has especially been laid are the initial and terminal rashes and the joint affections of dengue and the catarrh and lung and nervous complications of influenza. But exceptions are the rule. Again and again lung complications are wanting in influenza. This was noticed by Henrich "in the first outbreak of grippe in 1890" and by numerous observers in the last great epidemic of 1890. On the other hand they may occur in dengue (von Düring, Hong-Kong epidemic, 1895).

¹³ There can be no question as to many of the later continental sweats being influenza, but it is interesting to note Rayer's comments on the fact that Mead described the sweat as being imported into England in 1713; this was, of course, the famous Dunkirk fever or Dunkirk rant of that year. Another reference of Rayer is very instructive, his outbreaks occurred as a rule between 43° and 59° north latitude (though Hecker includes an outbreak in London), but he points out that M. Degenettes has described military sweat at Gizeh on the Nile. This outbreak which, had it occurred nowadays, would no doubt have been called dengue, serves to link up in a most unexpected manner identical diseases occurring under very differing conditions, in distant countries, and removed from one another by long intervals of time. Geographically it is interesting to note that of 89 departments in France no fewer than 55 are included in Hirsch's list of 194 outbreaks, though a strip of territory in the north-east of the country has been especially involved, and in this it has been two departments close to Paris (Seine Oise and Oise) and the department Bas Rhin, which have especially suffered.

¹⁴ Immermann quotes a few recent instances of "Schweissfriesel" which he regards apparently as examples of the true idiopathic sweating fever, but his account of this supposed disease really adds but little to Hirsch's. The Hallerndorf outbreak of July, 1888 (Riedel: *Münchener Medizinische Wochenschrift*, 1888, 10) only consisted of 14 cases (two men and 12 women) with four deaths. The Gurfeld outbreak (Drasche und Wechselbaum: *Wiener Medizinische Blätter*, 3, 1892) appears to have prevailed coincidentally with cerebro-spinal fever and it was a very fatal one, there being 57 cases and 14 deaths.

¹⁵ It is noted "that the patients though bathed in perspiration had very little thirst and the tongue was not dry nor even foul and maintained its natural moisture," a statement which may be compared with "the tongue was as moist as in perfect health" (Picardy sweat at Abbeville, 1735), or "In influenza (the tongue) is usually moist or only slightly coated." (Leichtenstern, speaking of influenza in the nineties.)

¹⁶ The only account of the disease extant emanates from an observer who "arrived only a few days before the sickness came to an end," scarcely an authority to call up an extinct disease from a vastly deep of 250 years.

¹⁷ Apropos of sweating sickness Hirsch has some interesting remarks on "the coincidence in time and place of the epidemics of military fever and cholera." He finds that in 1832 cholera and military fever spread simultaneously in the departments of Oise, Seine et Oise, and Pas de Calais. Again, "The same fact was observed over a larger area in the second epidemic of cholera in France in 1849." Moreover, in 1853 the two diseases occurred side by side and elsewhere similar coincidences were observed, in 1852 in Meiningen and in 1849 and 1855 "at many places in Belgium and Luxembourg." Obviously enough, in this country a similar coincidence in time and place has been observed between influenza and cholera (Thompson, Bristol), and Hecker from Germany notes that "the influenza of 1831 was immediately followed by the Indian cholera." Is there not here further reason for concluding that influenza and some of the military fevers are closely akin if not identical?

¹⁸ I had the opportunity some years ago of studying the papers relating to this disease collected by the late Dr. Christie which were entrusted to me by Dr. J. B. Russell and Sir Shirley Murphy and are now the property of the Epidemiological Society.

¹⁹ The same topic was debated in *THE LANCET* and in medical circles in India (Sandwith: *THE LANCET*, July 5th, 1890).

Geographical distribution of outbreaks of dengue and influenza during successive periods of 20 years. The dates given in ordinary figures are those of major or minor prevalences of dengue, while italic figures relate to influenza outbreaks.

FIG. 4.

World map showing the distribution of the genus *Pinguicula* from 1840 to 1859. The map includes a grid of latitude and longitude lines. Numerous locations are marked with numbers indicating the year of discovery. The distribution is concentrated in North America, Europe, and Asia, with a few scattered locations in Africa and Australia. The title "FIG. 4." is at the top center.

Key locations and years marked on the map:

- North America: 1855, 1853, 1858, 1855, 1841-51, 1846, 1856, 1845-8, 1856, 1844-54, 1848, 1852-3, 1844, 1851, 1853, 1855, 1857, 1843, 1849-50, 1857, 1848, 1854-1844, 1851, 1855, 1842, 1846-8.
- Europe: 1855, 1841-51, 1846, 1856, 1845-8, 1856, 1844-54, 1848, 1852-3, 1844, 1851, 1853, 1855, 1857, 1843, 1849-50, 1857, 1848, 1854-1844, 1851, 1855, 1842, 1846-8.
- Asia: 1855, 1841-51, 1846, 1856, 1845-8, 1856, 1844-54, 1848, 1852-3, 1844, 1851, 1853, 1855, 1857, 1843, 1849-50, 1857, 1848, 1854-1844, 1851, 1855, 1842, 1846-8.
- Africa: 1856, 1845-8, 1856, 1844-54, 1848, 1852-3, 1844, 1851, 1853, 1855, 1857, 1843, 1849-50, 1857, 1848, 1854-1844, 1851, 1855, 1842, 1846-8.
- Australia: 1851, 1853, 1855, 1857, 1843, 1849-50, 1857, 1848, 1854-1844, 1851, 1855, 1842, 1846-8.

1840 - 1859

Geographical distribution of outbreaks of dengue and influenza during successive periods of 20, and finally of 26, years. The dates given in ordinary figures are those of major or minor prevalences of dengue, while italic figures relate to influenza.

The rash or rashes of dengue are by no means invariably met with (Skottowe's account and the Queensland epidemics); the terminal rash may be miliary in form (Holliday, New Orleans, and Thomas, Charleston); and rashes—morbilliform, scarlatinal, urticarial, and miliary—may occur in influenza. In the later epidemics of dengue swelling of joints has been uncommon (de Brun, Mordtmann, von Düring, and Skottowe) and joint pains may occur in influenza (Bristowe). As instances of the confusion which reliance upon clinical distinctions may produce the Queensland epidemics and that described by Skottowe may be referred to, or the outbreak in Fiji in 1890 may be cited; we are told there was no influenza in Fiji in that year but "a prevalence of catarrhal complaints was met with and about the same time a few cases of smart fever, with headache, pains in the eyeballs, *quasi* rheumatic pains in the limbs, and blotchy red rash were observed, but these were recognised as dengue." (Parsons, First Report, p. 49.)

If we turn from clinical to epidemiological distinctions confusion becomes worse confounded; most remarkable of all is the manner in which, on an extended historico-geographical survey, the two diseases merge one into the other. Thus the repeated invasions of the West Indian islands by influenza in the latter part of the eighteenth and early part of the nineteenth centuries are well attested (Figs. 1 and 2); but between 1820 and 1840, when influenza was almost pandemic, there was in the West Indies no influenza but a severe outbreak of dengue. (Fig. 3.) Contrariwise, between 1850 and 1905, despite prevalence of dengue elsewhere, no dengue, only influenza, is forthcoming from these islands. (Figs. 4, 5, and 6.) In 1826-28 "dengue" raged in the West Indies, in the Southern States of the Union, and in the north of South America (Fig. 3); coincidentally "influenza" was prevalent over the Western Hemisphere and notably in the Southern States of the Union, in Mexico, and in Peru. In 1850 dengue became diffused over the Southern States (Fig. 4) and at the same time influenza prevailed there and elsewhere. Dengue was in Alabama and Louisiana in 1872; simultaneously influenza spread there and in the Northern States. (Fig. 5.)

With these phenomena in the Western Hemisphere may be compared the behaviour of the two diseases in India and the East Indies. Taking the widespread influenza epidemic of 1781-83, India suffered, and coincidentally India and the East Indies presented a dengue prevalence. (Fig. 1.) In 1824-28 influenza was confined to the Western Hemisphere (save for outbreaks in Russia and Siberia); dengue prevailed in India and Further India. In 1831-37 India and Further India with the rest of the world underwent attack by influenza. (Fig. 3.) In the next period of widespread influenza dengue alone is reported from India and Further India (Fig. 4); again in the "seventies," when influenza is spread abroad in the Western Hemisphere dengue alone appears in India and the East Indies, but it is then as widely distributed as is influenza on the other side of the world. (Fig. 5.) The escape during recent years of places in the Western Hemisphere, formerly favoured seats of dengue, and their involvement in influenza prevalence may be set against the fact that in the East Indies, China, and Australia dengue has been reported from localities which suffered but lightly in the last great influenza pandemic.

Two outbreaks which illustrate points already discussed may be here referred to. Dr. R. A. Dunn, in the winter of 1904-05, encountered in East Herts "an epidemic simulating influenza."² The disease was widespread, of low mortality, and mainly affected children; relapses were common, convalescence was prolonged, a few cases presented a rash and later desquamation, and in at least one instance a miliary eruption was observed. The disease assumed three types: scarlatinal, cerebro-spinal, and typhoidal, but Dr. Dunn concluded that he was dealing with one disease, for the different types were commonly associated in the same household.³ The student of influenza outbreaks is so accustomed to finding influenza described as a new disease that the fact that the East Herts epidemic was credited with being the first of its kind is not altogether surprising; yet in Parsons's

report the difficulty of distinguishing influenza from scarlet fever and cerebro-spinal fever (the diseases from which diagnosis was held to be most difficult in East Herts) is noted and, as a matter of fact, influenza, so-called, was prevalent in London and in other parts of England when the East Herts prevalence occurred. A point of special interest in the outbreak is undoubtedly the occurrence of secondary or terminal rashes (described by Clark, Thresh, and others), for it would appear that when "influenza" escapes as it were from the now well-nigh immunised urban populations of this country and sports in a comparatively sparsely populated rural district, it assumes close resemblance to dengue—indeed, had the East Herts outbreak occurred in a tropical town, I am assured by an observer who has seen dengue in the tropics that it would undoubtedly have been regarded as an epidemic of that disease.⁴

The second outbreak, half sweat, half measles ("moitié rougeole et moitié suette"), occurred in Vienne in 1887 and was reported upon by a Commission with Dr. Brouardel at its head.⁵ It was declared to be Picardy sweat (of which very little had been heard for half a century), or at least a "suetto à forme rubéolique," and the Commission refers to outbreaks presenting this "bizarre" form in Périgord in 1841, Poitiers in 1845, Seine et Oise in 1861, and Pas de Calais in 1864. The affinity of the Poitou disease to dengue and to the East Herts outbreak—i.e., to influenza—must strike the reader of the French Commission's report.⁶

It may be urged, however, that admitting the close clinical resemblance between dengue and influenza and the curious coincidences presented in their historico-geographical record there are certain epidemiological distinctions. Thus some observers have maintained that dengue spreads comparatively slowly from person to person, while influenza extends far more rapidly and presumably by atmospheric contagion.⁷ The thesis that influenza travels more rapidly than can be accounted for by human intercourse has, however, been disposed of by the more complete records of recent years and is universally discredited. Leichtenstem's references to the fact that Zülzer and von Düring held dengue to be contagious, influenza not contagious, while he himself maintained dengue to be "contagious miasmatic," and so on, have thus ceased to be of interest.

Turning now to the allegations that dengue is a coast disease and unable to rise to any altitude, Manson points out that there are many exceptions. Thus, "in 1870-73 it spread all over India"; again, he says, there is "a

² The Hertfordshire epidemic is, moreover, suggestive of some of the outbreaks of disease described by Bruce Low, for example, that at Ramsd in 1831, Laxfield in 1834, and the anomalous influenza of Market Rasen and of a Shropshire village in the same year (see reports of the medical officer of the Local Government Board for 1830, 1831, and 1834, and the Transactions of the Epidemiological Society for 1836-99); outbreaks which Bruce Low found difficulty in deciding to his complete satisfaction were not really outbreaks of influenza.

³ Bulletin de l'Académie de Médecine, 1887.

⁴ The villages and towns in an area some 70 miles by 50 in extent to the south-east of Poitiers were involved. In some instances whole families were prostrated, the elders with "sweat," the children with a disease accompanied by a morbilliform eruption. Relapses were common, the disease was specially apt to be severe in male adults; the case-mortality ranged from 3 per cent. upwards. As regards diagnosis, influenza, la grippe, was not even considered by the commission. Cough and bronchitis, sore throat, and coryza were present in some instances. Measles could be excluded because communes which had recently suffered from measles were again severely attacked by the "new disease." Moreover, the incubation period of the malady was short, only about 24 hours.

⁵ Leichtenstem cites Skottowe's report on the dengue epidemic of 1835-36 in the Fiji Islands as showing how a single observer dealing with the two diseases is able to discriminate between them. But the distinction upon which Skottowe mainly relies is the difference in the mode of spread—dengue "hugging the coast," influenza being "disseminated like the wind over all the islands"—and on this point Leichtenstem remarks: "The comparison is interesting but the explanation is incorrect." As regards the existence of two or rather three epidemics in 1835-36 in Fiji Leichtenstem says: "Just before and just after the dengue epidemic there was an influenza epidemic"; Skottowe's own account is to the effect that "a few weeks before and continuing some little time after the dengue outbreak" influenza prevailed or, as he elsewhere puts it, dengue "broke out during the prevalence of an epidemic of influenza." When it is added that the dengue "in many of its symptoms ... differed considerably from that described ... in the text-books"; that "the majority of cases ... were not typical in the ordinary conception of the term"; that even in one house "one member of the family was suffering from influenza and another from dengue"; that the cases did not, as a rule, present both initial and terminal eruptions; that Skottowe saw no fibrinous thins and tendinous insertions of the eyelids and marked and persistent debility in convalescence were the prominent features in the so-called "dengue"; it may be surmised that not three epidemics but one only was in question.

⁶ A conference of Hertfordshire medical officers of health was convened by Dr. E. E. Fremantle, at which I was permitted to be present. Dr. Lovell Drage and I urged at this conference that the outbreak was one of influenza.

⁷ Dr. M. H. Gordon, who made a bacteriological examination of material obtained from the later cases, only exceptionally found Pfeiffer's bacillus, but almost always the micrococci catarrhalis.

distribution and concentration of population on the seaboard and along rivers," and "the freedom of communication between communities so located probably determines this preference for such localities."³³ In Queensland in 1893 it was noted that the disease did not hug the coast but no doubt it often does; indeed, it might, *a priori*, be expected that when influenza spreads in the tropics it would do so after the manner of "dengue" and not after that of "influenza" as observed in Europe and North America. Teichstenstern says, as a matter of fact, this is the case.

The most marked contrast of all is the limitation of dengue to hot countries. But here it should be noted that coincidentally with involvement of the West Indies and Southern States of the Union by dengue influenza has prevailed in the Northern States. When Philadelphia suffered from the disease which Hirsch says was dengue in 1780 (a disease which on reference to Rush's original account proves, however, indistinguishable from influenza) influenza prevailed in adjacent regions a little further north. In 1784 and again in 1788 "dengue" broke out in Cadiz and accounts of influenza are forthcoming in those years from beyond the Pyrenees. Again, in 1863 and 1867, when dengue prevailed in Cadiz, influenza is reported from over the frontier. Leichtenstern says the dengue of 1784 in Cadiz and Seville was "probably carried by troopships which came from the West Indies," but neither he nor Hirsch²⁷ mentions the existence of dengue in the West Indies in 1784 or 1788. Similarly Leichtenstern refers the Cadiz epidemics of 1863 and 1867 to the West Indies, "the home of dengue," though again the authorities are silent as to the existence of dengue in "its home" in those years; Hirsch makes mention, however, of influenza in France in both 1863 and 1867 and states that influenza was widely prevalent in Europe in 1781-82 and again in 1788.

Take, again, Arabia and North Egypt. Leichtenstern says that the principal epidemic years there were 1835-36, 1845, and 1868. Now in 1835-36 influenza, according to Hirsch, was also prevalent in Egypt and Syria; while in 1846-47, and again in 1868, it prevailed in Turkey and Constantinople. What becomes, then, of the limitation of the spread of dengue by a particular degree of latitude? The merging of dengue and influenza in 1889, on passing from Egypt and Syria to Turkey and Greece, has already been commented upon. It is surely not a little remarkable that when North Europe (France, Germany, and Russia) present influenza and North Africa (Tripoli, Egypt) dengue, the intermediate countries, Spain and Turkey, yield evidence now of one and now the other disease. It may be added that several authorities deny that dengue is limited to the hot season of the year—e.g., Thomas (Savannah, 1881), De Brun and Rouvier (Beyrouth, 1889), and writers on the Queensland epidemics of 1898 and 1905.

A further point must be considered as it throws light on the likelihood of unreal distinctions between dengue and influenza being drawn. According to Leichtenstern "influenza presents at least two phases, one pandemic and the other endemic, and they follow different epidemiologic rules."²³ He notes as characteristic of the so-called "trailing epidemics," diminished morbidity, less wide geographical distribution, scarcely recognisable communicability, slow development and extension, and continuous diminution in frequency and intensity. He speaks of a "successive lessening of the susceptibility of the population due to their immunisation, &c.," and speculates as to whether "the germ continues to thrive in an attenuated

²³ The observations as to escape of certain higher lying portions of the island of Réunion are referred to by Hirsch and by Leichtenstern and the latter says that similar observations have been made in "Cuba, Jamaica, Martinique, and almost everywhere," though he quotes an apparent exception in a hot year in Lebanon. "Les villages situés aux altitudes les plus élevées le Liban, la plaine de la Becca, l'anti Liban ne furent pas plus épargnés que les villes de la plaine" (De Brun). This same author notes, however, in 1890 the exemption from influenza of the Isle of Man, the Bahamas, the Seychelles, and other places, and that of the Sants observatory population, 2504 metres above the sea. Still more to the point is his statement that "Influenza, too, although affecting both land and sea in the tropics, was confined principally to the chief trade ports."

²³ Hirsch refers to the "perspiration with its pungent odour" in this outbreak of "dengue" and says the poor people called it "pladosa," or the merciful, because of its tendency to a favourable issue.

form in the nasopharynx of individual patients the endanthropic attenuated germs" becoming virulent again after a time and thus causing local epidemics." The fact that influenza has "pandemic" and "trailing epidemic" phases is important when it is recollected that, broadly speaking, the influenza countries include some of the most densely, and the dengue countries some of the most sparsely, populated parts of the world. (India and China must be left out of account in making this comparison, as so little is known of their diseases.) Thus in influenza countries "trailers" are commonly met with, while in the dengue countries they are comparatively rare; in the former the disease is a "composite image" of the influenza of pandemic and trailing epidemic phases, and in the latter it appears more exclusively in pandemic phase. Does not this fact, together with differences dependent upon altered climatic conditions, explain the supposed distinctions between dengue and influenza?

If the two diseases be one and the same it does not necessarily follow that the whole world must be swept in a pandemic. Leichtenstern notes that "in former times extensive epidemics of influenza occurred limited to North America alone"; and in 1875 the Eastern Hemisphere escaped lightly when North America was hard hit. There would appear, therefore, to be an "alternating national immunity," as, indeed, Leichtenstern contends. Europe suffers heavily in the "thirties" and "forties" as compared with India, escapes lightly in the "seventies," and suffers heavily again in the "nineties," when India in its turn is comparatively immune. The records are far too imperfect to follow this out in detail; in particular the absence of knowledge of the diseases of the densely aggregated Eastern Hemisphere populations prohibits this.³⁰

On reviewing the history of influenza and dengue it is clear that they afford abundant illustration of the manner in which fashionable theories colour accepted descriptions of disease. One feature at any rate is clearly brought out—the extraordinary similarity in their behaviour when they are in pandemic phase. The sudden onset, the tendency to relapse (with altering or modified symptoms), the establishment of greater or less degree of immunity in the populations affected, the “posting character” of the epidemics, the involvement of animals, the attack upon particular classes of the population and upon inmates of institutions, and the return after a number of years to the point of departure, completing the cycle of events. If the range of vision be contracted to some 20 or 30 years we are impressed with the rapid transformations presented; on a broad view, however, the type remains extraordinarily constant and we are forced to the conclusion that apparent instability results merely from interplay between the germ and its environment. Not only in influenza, so-called, but in the dengue of the tropics and the sweating fever of the fifteenth century we may claim to discern the operation of a single disease entity. We may add with Hirsch that “few among the acute infective diseases have manifested in their prevalence at all times and in all places the stamp of uniformity so strongly as *the aggregate of symptoms as influenza.*”

10 It is interesting to note that England "the chief maritime country," as Leichtenstern terms it, was apparently infected from America (so he says) in 1891, Germany and France remaining almost exempt, just as when, after prevailing in North America in 1876, influenza invaded Europe in the following year England is believed to have escaped. It may be that England, which as chief maritime country had suffered so severely from 1833 to 1855, was comparatively immune in 1874, but the Registrar-General's returns seem to indicate that there was influenza in that year and the fact must be within the knowledge of many medical men now living. I had what I believe was an attack of that disease in that year.

an attack of that disease in that year.

³⁰ As there are, nowadays, scapies who doubt the existence of influenza in this country at the present time, I may take shelter under the authority of Goodhart (Alburt's "System of Medicine"), who believes "influenza is still with us." Those who differ may at least be asked to explain where they draw the line, i.e., after 1890, or 1891, or 1892, or 1895, &c. It remains, however, to be said, that the bacteriologist, to whom influenza connotes presence of the bacillus of Pfeiffer, has grave difficulties to contend with in the trailing epidemics he regarded as influenza. In Kolle and Wassermann's recent text-book it is admitted that Pfeiffer's bacillus occurs in people who have not influenza, but this is justified by explaining that a similar phenomenon presents itself in diphtheria, cholera, and enteric fever. Elstein (Münchener Medizinische Wochenschrift) finds Pfeiffer's bacillus often absent in influenza and present in scarlet fever, and numerous other observers might be referred to as having found it in measles, scarlet fever, whooping cough, &c.; Washburn and Eyre (Brit. Med. Jour., Dec. 20th, 1902) found it in cases which they describe as "unrecognized cases of influenza." La Semaine Médicale (March, 1905, p. 103) contains an interesting discussion on the bacteriology of an outbreak in Paris (see also THE LANCET, March, 1905), supposed not to have been influenza, because Pfeiffer's bacillus was not forthcoming.

SPIROCHÆTA PALLIDA (SPIRONEMA PALLIDUM) IN SYPHILIS.*

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SYPHILIS has always been regarded as a disease of an extraordinarily infective or contagious character, hence it is not remarkable that a *contagium vivum* has long been suspected to play the principal rôle in its etiology. Krzyżtalowicz and Siedlecki¹ point out that in the sixteenth century Kirscherius and David Abercromby claimed a "*contagium animatum*" as its cause and Deidier (1723) spoke of "*animalcula numerosa*," these terms no doubt being used without much appreciation of what they imply in more modern times.

The list of causes assigned of late years is a formidable one: bacteria of all kinds, cocci, bacilli including the ubiquitous pseudo-diphtheria bacillus, and Lustgarten's bacillus which for a time had an unsettled reign as the "syphilis bacillus" but which is now recognised to be probably identical with the smegma bacillus. Lassar² states that more than 25 causes of syphilis have been described during the last three decades. Niessen in 1899 described a bacillus not stained by Ziehl's method but Gram-positive. This inoculated into rabbits produced ulceration, swelling of lymphatic glands, and lesions of the central nervous system in which a prominent histological feature was a peri-arteritis analogous to that found in syphilis in man. Kunitzky described comma-shaped bodies and bodies like spirilla. Löffler described small refractile bodies in the blood of syphilitics which became less numerous during mercurial treatment. Winckler found peculiar spherical bodies in syphilitic local lesions and in glands.

Several authors have believed that the causal agent is protozoal—e.g., Hügel, Horand¹ with his "hémoprotiste," Holzhauser, lately Schüller² and Scassano,³ the last-named figuring protozoa in all stages of development. Still more recently Siegel⁴ has described the minute cytorrhocytes, a flagellated protozoan, and he claims that it occurs constantly in syphilitic lesions. This has not been found by more than one or two independent observers and Metchnikoff says that Siegel's descriptions and figures are enough to prove to him that this body is of no importance if it is not an artefact.

Neisser⁵ also discusses this question. He states that Siegel's bodies can be found in normal blood and emphasises the fact that he claims to have produced syphilitic lesions in rabbits, which are generally considered to be immune from syphilis. To prove the point Neisser inoculated several rabbits with syphilitic material and then after several weeks inoculated monkeys with portions of their kidneys. No lesion resulted. His experiments are strongly suggestive but not absolutely convincing. I have seen peculiar rounded bodies in films from indolent buboes, like those described by Winckler, and which are possibly degenerated cells. They usually stain bluish with Giemsa's solution. More interesting than these are loop-shaped bodies, staining a bright pink with Giemsa's solution, and found in the same situations (see Case 17). The opinion has been expressed by several, including Lassar,² that some of these bodies—e.g., Siegel's—may turn out eventually to be related developmentally to the spirochæta of Schaudinn and Hoffmann. Krzyżtalowicz and Siedlecki have seen similar loop shaped bodies in glands.¹

The Imperial Board of Health in Berlin commissioned Schaudinn, a biologist already well known by his researches on the malaria parasite, trypanosomes, &c., to investigate Siegel's results, and he requested Hoffmann, a skilled syphilologist, to assist in the research. In a very short time they announced the discovery of spirochæta in primary and secondary syphilitic lesions. It is a curious fact that Siegel and his cytorrhocytes are not, so far as I can find, referred to in all the papers they have published.¹

The possibility of spiral forms having a causal relationship

* An abstract of this paper was read before the Edinburgh Medical-Chirurgical Society on Jan. 17th. The "superior," or raised, numerals occurring throughout the article refer to the bibliography at the end of the second part.

to syphilis was first hinted at by Donnè in 1837.⁹ He found and figured forms to which he gave the name "*vibrio lineola*." Neumann refers to this observation in his textbook on syphilis (1899). Possibly the *vibrio lineola* may correspond to what is now named "*spirochæta refringens*."

Metchnikoff and Roux in 1902 discussed the possibility of spirilla smaller than those of Obermeier or those discovered in a disease of fowls in Rio de Janeiro being the cause of syphilis and came to the conclusion that the agent was more probably a non-motile microbe.¹⁰ Since Schaudinn and Hoffmann announced their discovery Bordet and Gengou¹¹ state that in 1902 they had seen these same spirochæta in a case of syphilis, but as they failed to demonstrate them in other cases they concluded that they were of no practical importance.

Literature.—Schaudinn and Hoffmann⁵ first describe two forms of spirochæta occurring in syphilitic lesions not only at the surface but also in their depths and in the lymph glands connected. One form is delicate (*spirochæta pallida*) 4–10 μ long with an average length of 7 μ , less therefore than the ordinary spirochæta of the mouth and those of relapsing fever. They remain alive for several hours in physiological salt solution. They were found in entire and ulcerated skin papules, condylomata, hard chancre, and glands, the age of which varied from five and a half weeks to six months. With the *spirochæta pallida* they sometimes found a coarser form (*spirochæta refringens*), particularly in ulcerated lesions. In later papers^{6, 7, 8, 12}, one of which⁶ was given by Schaudinn in opening a discussion on the subject before the Berlin Medical Society, more details are given as well as the distinguishing characteristics of the two forms of spirochæta. They describe the *spirochæta pallida* as extremely delicate, weakly refractile, vigorously motile; staining rose-pink with Giemsa's stain; requiring powers of 800 and upwards to demonstrate; long, very thin, and filamentous, spiral or corkscrew-shaped, with pointed ends. Its length varies from 4 to 14 μ ; its breadth is difficult to gauge, being at most about 0.25 μ ; the spirals number 6 to 14. These are abrupt, narrow, regular, and deep. It progresses by rotating on its long axis and when at rest shows undulatory movements in its whole length, suggestive of the play of a vibratile membrane. The staining characters distinguish it from all other spirochæta and also from spirilla, these staining of a bluish or purplish colour by Giemsa's method. The *spirochæta refringens* is flatter and the spirals are wider, giving it a wavy or undulating form. It is thicker, stains more deeply, and usually has truncated ends. It never occurs in the depths of syphilitic lesions, in glands, or non-ulcerated papules. It possesses a vibratile membrane.

Schaudinn, as a result of his previous studies on similar parasites in the stone owl (*athene noctua*), placed spirochæta amongst the protozoa—group flagellata—and no longer with the bacteria. Schaudinn and Hoffmann found *spirochæta pallida* constantly in surface lesions and also in all available cases in the indolent buboes, in the latter unaccompanied by other micro-organisms. Schaudinn demonstrated them in blood obtained by puncture of the spleen during life.

Buschke and Fischer¹³ demonstrated *spirochæta pallida* in the spleen of a child who died from congenital syphilis and also¹⁰ in blood films taken from the same infant during life. Non-syphilitic children gave negative results.

Metchnikoff and Roux had already¹⁰ succeeded in infecting monkeys with syphilis and now¹⁰ reported that in four out of six cases they found spirochæta corresponding to *spirochæta pallida* unaccompanied by other forms. They found them, moreover, in four out of six cases in man in recent scrapings of secondary papules and also in one case of congenital syphilis. In control cases (psoriasis, scabies, acne, &c.) the results were negative.

Raubitschek¹⁴ and Frosch¹⁵ detected the *spirochæta pallida* in the circulating blood in secondary syphilis.

Wechselmann and Löwenthal,¹⁶ using the "ultra-microscope," described the spirochæta as made up of several segments and noticed what they took to be a nucleus.

Levaditi^{17, 18, 19} found typical spirochæta in the contents and bases of the bullæ of pemphigus in a congenitally syphilitic infant three months old and also in the spleen, lungs, and particularly the liver of the same case. He considers congenital syphilis to be a spirillosis of the newly born.

Salmon²⁰ and Hoffmann¹⁰ confirm this result in the pemphigus of congenital syphilis.

Jacquet and Sevin²² found *spirochæta pallida* in secondary lesions but failed in 23 tertiary lesions examined.

Kraus²³ insists on the necessity for making a considerable number of preparations, as the spirochæta are often very irregularly and unequally distributed. He observed that in a chancre kept 12 hours on ice, no spirochæta could be demonstrated, although they were visible in fresh preparations. He has never found *spirochæta pallida* in controls.

Volk,²⁴ in the chancres and papules in 14 syphilitics, found the parasite in the great majority. The results were positive in only one out of 14 syphilitic glands and were negative in the glands connected with 17 control, non-syphilitic lesions.

Hoffmann,¹⁰ in a paper already referred to, notes that Schaudinn and he found *spirochæta pallida* in non-ulcerated skin papules far away from the genitals (breast and back).

Horand¹ refers to his published papers describing a "hémoprotiste, agent pathogène de la syphilis," and believes that Schaudinn's parasite corresponds to one of the involutin forms of this "hémoprotiste."

M. Schüller,²⁵ in a review of Schaudinn and Hoffmann's paper on the Occurrence of *Spirochæta Pallida* in Indolent Buboës,⁷ doubts whether there is any etiologic relationship at all. The parasite may have entered through the ulcerated surfaces. Moreover, bacteria have been found in glands in connexion with non-ulcerated lesions and also in congenital syphilitic lesions. He thinks that the presence of *spirochæta pallida* in experimental lesions in monkeys does not clear up the question, but simply shows that along with the cause of syphilis the spirochæta and any other bacteria present have been transferred. He also criticises the technique employed and cannot understand Schaudinn's grounds for placing spirochæta amongst the animal parasites.

Vuillemin²⁷ proposes the name "spironema" for spirochæta with sharp ends. The "*spirochæta pallida*" would thus become the "*spironema pallidum*."

McWeeney²⁹ found *spirochæta pallida* in nine primary and secondary cases, not in a tertiary ulcer of the palate or in a non-ulcerated, muco-purulent vaginitis. He thinks it possible that tertiary lesions and congenital forms of syphilis may be due to a chronic intoxication caused by absorption of metabolic products of the spirochæta.

O. Fraenkel⁴⁰ writes enthusiastically in support of Schaudinn and Hoffmann and goes further than these authors, claiming that there is no doubt that *spirochæta pallida* is the cause of syphilis. He found that organism in six varied cases of syphilis.

Vilh. Jensen⁴¹ found *spirochæta pallida* in a hard chancre and the associated gland and in several entire and ulcerated papules in the region of the genitals. They were not found in control cases, non-syphilitic. He believes that the true cause of syphilis has been found.

Bordet and Bayet⁴² consider this the most serious attempt yet made to unravel the etiology of syphilis. Bayet found *spirochæta pallida* in the spleen of a congenitally syphilitic infant. Lassar⁴⁴ discusses the discoveries of Siegel and Schaudinn and reminds his readers that during the last three decades more than 25 causes of syphilis have been described.

K. Herxheimer and H. Hübner⁴⁵ demonstrated spirochæta with Giemsa's stain and also with Nilblau B.R. or Capriblau. They examined 18 cases and in 15 of these they found spirochæta pallida but only in extremely small numbers in some cases. In two of the remaining cases the diagnosis was between soft sore and syphilis. In these no spirochæta pallida were found and the subsequent course of the illness justified that result. They claim to have seen a spirochæta in a section cut in paraffin and stained with Nilblau. Examinations of blood, lymph glands, and congenital syphilides proved negative.

Kiolomenoglou and von Cube⁴⁶ confirmed the fact of the occurrence of *spirochæta pallida* in syphilitic lesions but they considered it still more important to ascertain whether it was always absent from non-syphilitic lesions. They exercised the greatest care in making and staining their preparations. They found *spirochæta pallida* in a collection of syphilitic cases, in an inflamed phimosi in which there may have been a masked primary sore, in gonorrhœal pus from Bartholin's gland, in balanitis, in pus from a scrofulo-dermatic abscess, in an ulcerating cancer, and in condyloma acuminatum. They found forms intermediate between *spirochæta pallida* and *spirochæta refringens* and corresponding to neither. Schaudinn, to whom their preparations were submitted, confirmed their opinion that there were more than

two species of spirochæta present, but with Hoffmann declares that all occurring in non-syphilitic lesions, can be, either morphologically or tinctorially, distinguished from spirochæta pallida. Still, one feels that they do not conclusively dispose of all the objections of Kiolomenoglou and von Cube.

Hoffmann¹¹ with Mulzer found spirochæta in ulcerated carcinomas of the cervix and skin very similar to *spirochæta pallida* and which they could not with confidence distinguish from it. In a later paper¹² Hoffmann states that those found in carcinomata have blunt ends.

Babes and Panea^{30 31} found spirochæta pallida in two out of three cases of congenital syphilis, in one case occurring especially abundantly in the suprarenals. They were found where characteristic histological changes were best seen—e.g., the liver; but in the suprarenal such changes were not so marked, though the organisms were in great numbers.

Galli-Valerio and Lissauer³² emphasise the fact that spirochæta pallida has been found in closed lesions—e.g., indolent buboes. They detected it in condylomas and in mucous plaques in six out of ten syphilitics. They failed in two cases undergoing treatment and in a tertiary case, also in a hard chancre and gland connected therewith, and in the cerebro-spinal fluid of two cases.

Krzyształowicz and Siedlecki (Krakow)³³ give an interesting historical retrospect of the search for the cause of syphilis and furnish full references. They describe several delicate shapes in the fluid from excised glands, very motile, at first oval but on longer observation elongating at both ends as if sending out processes in one line. They describe apparent longitudinal splitting up of spirochæta similar to what is seen in trypanosomes. They figure coarse spirochæta as pallida, which one should rather incline to place under the "refringens" class. They state that the numbers of spirochæta pallida increase in proportion to the distance from the surface.

Thesing, who at the first discussion in the Berlin Medical Society suggested that the spirochæta came from the staining fluid, believes^{34 35} that they are harmless saprophytes occurring secondarily in syphilitic lesions and penetrating to glands from the surface. He thinks, moreover, that such a flexible body as *spirochæta pallida* should not be tied down to the constant possession of steep spirals.

Ploeger³⁶ discusses the morphology and development of the spirochæta and distinguishes them from spirilla by the flagella which the latter possess. He suggests that all spirochæta the spirals of which measure about 1 μ or less should be placed with *spirochæta pallida*, and those with more than 2 μ with *spirochæta refringens*. He describes short forms with a terminal knob. He found the *spirochæta pallida* in two chancres, one gland, and three anal and one vulvar papule. One cannot be certain what proportion this was of the cases examined. Some of the forms seen in films from glands were 20 μ long. He, as well as Rille³⁸ and Mulzer,³⁹ has seen some apparently attached to red blood corpuscles and the suggestion is made that these cells may convey the parasite throughout the body.

Splizer⁴¹ demonstrated the presence of the spirochæta pallida in six primary sores; in seven secondary cases even after prolonged treatment; in one ulcerating case of eight years' duration (Spätform), with infiltration of the nose, lips, and lower lid; and in a case, 12 years after infection, in a gumma of the scalp. In this case only one spirochæta was found in three or four preparations. He never found spirochæta in the blood or in a series of non-syphilitic conditions.

Rille³⁸ refers to the behaviour of the *spirochæta pallida* in physiological salt solution and in glycerine. He refers to Bordet's and Gengou's observation of these spirochæta in 1894. He had 1902 and says that he himself saw them in 1894. In lately positive results in three primary lesions in the male, in one in the female, and once in an inguinal bubo and condyloma latum. He thinks that the possibility of the *spirochæta pallida* being a morphological variant of the *spirochæta refringens* should be excluded. He refers to Donnè's discovery of "vibrio lineola" (1837) and his belief that it was the cause of syphilis.

Noeggerath and Staehelin⁴⁴ found the *spirochæta pallida* in syphilitic blood by the following method. They take one cubic centimetre of blood from a vein, mix with ten cubic centimetres of $\frac{1}{2}$ per cent. acetic acid in water, centrifugalise, and examine the deposit.

Neumann⁴¹ found the spirochæta pallida in six cases, two of which had been treated. Queyrat and Joltrain^{41 42} found the *spirochæta pallida* in

a quarter of their cases (31 in all) of hard chancre but never in non-syphilitic lesions. They think that it must have a diagnostic significance.

Jesionek,¹³ discussing Ploeger's paper,¹² refers to the conclusions of Klotzmann and von Cube and maintains that their results are correct. He refers also to the intermediate forms and suggests that *spirochæta pallida* and refringens may be developmental stages of one and the same organism. This was before *spirochæta* were found in the blood.

R. Kraus and Prantschoff¹⁴ contribute an important paper. They find that *spirochæta* disappear from excised chancres when kept and quote Metchnikoff and Roux, who found that after six hours an excised lesion was useless for the demonstration of *spirochæta*. This is interesting in view of the generally accepted clinical fact that the syphilitic virus removed from the living body or after death soon degenerates. They found the *spirochæta pallida* in 32 out of 37 hard chancres; in the negative cases the lesions were necrotic, purulent, or the material was delayed too long in transit. 18 out of 25 papules gave positive results. In the lesions in four macacus monkeys *spirochæta pallida* were found. Like Ploeger, they saw short forms with from three to four spirals, with spherical bodies either attached to one end or free. They suppose that they are involution forms analogous to those seen in Pfeiffer's phenomenon in the case of the cholera vibrio. On making sections of an excised sore parallel to the surface and examining films from each they found that true *spirochæta pallida* increased in numbers as they went deeper.

Levaditi and Petresco¹⁵ find that the *spirochæta* pass readily and in considerable numbers into blisters produced by cantharides on the surface of syphilitic lesions. They have been successful in this way in demonstrating *spirochæta pallida* in roseolar eruptions.

Bandler¹⁶ details the methods of staining he has found successful.

Leiner¹⁷ found *spirochæta pallida* in congenital syphilitic pemphigus. Lannois¹⁸ saw Schaudinn's *spirochæta* associated with Vincent's bacillus fusiformis. Almkvist and Jundell¹⁹ found the *spirochæta* six times in seven cases, but never succeeded in films from glands, blood, or non-syphilitic lesions.

Mulzer²⁰ demonstrated *spirochæta pallida* in films from 20 out of 22 cases. One of the failures was from a roseolar eruption. He occasionally found them in cells probably of endothelial nature. Some showed a spindle-shaped swelling between the middle and terminal thirds. In one case he found a mesh-like agglomeration of from 20 to 40 individuals. No *spirochæta pallida* were found in normal smegma in five women and ten men. He quotes Osilag's negative results in three men and 16 women. Rona found *spirochæta* in six out of 20 healthy women and in three out of 18 healthy men. Menge-Kronig found them also in women. In 21 out of 29 patients with non-specific ailments Mulzer found no *spirochæta*.

Nigris²¹ claims that he found the two varieties together in the blood. Hoffmann,¹¹ who saw the preparations, denies that this is the case.

Scholtz²² doubts whether *spirochæta pallida*, even when occurring in great numbers in syphilitic lesions, has an etiological significance. It may be that the conditions produced are specially favourable for that organism to grow and develop. He found an apparently undoubted *spirochæta pallida* in a condyloma acuminatum. In primary and secondary lesions he had 19 positive and 11 negative results and two positive and one negative result in congenital syphilis. He failed to find *spirochæta* in roseolar blood in two cases, in buboes in two cases, and in tertiary syphilis in four cases. In 12 controls the results were negative. Hoffmann¹¹ examined the film from the condyloma acuminatum and averred that only *spirochæta refringens* was present.

Grouven and Fabry²³ had positive results in 14 out of 20 primary and secondary lesions, in two cases of congenital syphilis, and in syphilitic blood, following the method of Noeggerath and Staehelin.²⁴

Rille and Vockerodt²⁵ in 14 syphilitics found manifest *spirochæta pallida* in 22 different lesions. They failed in roseolar blood and syphilis hæmorrhagica neonatorum. With Ploeger they think that the *spirochæta* have a relationship to the red blood corpuscles. They found them in a case seven or eight years old.

Sobornheim and Tomaszewski²⁶ in 50 primary and secondary syphilitics found *spirochæta pallida* in all cases.

In eight tertiary syphilitics they failed. In some of the positive results *spirochæta* were very scanty and found only after prolonged search. They doubt whether they are actively motile. They consider that *spirochæta pallida* is the cause of syphilis.

Siebert²⁷ has found *spirochæta* which agree strictly with the type "*pallida*" indicated by Schaudinn and Hoffmann only in syphilitic lesions. He refers to the difficulties of distinguishing them morphologically and points out that there is no analogous disease in which the number of the causative organism bears no relation to the intensity of the reactions. Here the organisms are generally scanty. He found *spirochæta* which in delicacy could not be distinguished from the *spirochæta pallida*. He is evidently not wholly convinced. His results are positive in 52 out of 66 cases of primary, secondary, and congenital syphilis; negative in six indolent buboes, in seven tertiary cases, in blood, and spinal fluid. He confirms the observations of Klingmüller, Baermann, and Metchnikoff that the syphilitic virus cannot pass through a porcelain filter. His results were also negative in 45 control non-syphilitic cases.

Flügel²⁸ examined 28 cases, in all being successful. Some showed only one *spirochæta pallida* after very prolonged search. In the liver of a congenitally syphilitic child he found only one *spirochæta*. They were frequently in relation to red blood corpuscles (cf. Ploeger, Rille, Scholtz, and Roscher). He found them in the blood by the method of Noeggerath and Staehelin.

Brönnum and Ellermann²⁹ found *spirochæta pallida* in two cases of congenital syphilis.

Roscher³⁰ produces a very long, complete, and carefully detailed paper in three parts. Of primary affections, genital and extra-genital, 31 gave positive results and one was negative. In 16 there were no general evidences of syphilis, but in 11 of these which continued under observation secondary signs appeared later. 30 buboes gave positive results and eight were negative. 55 moist papules were positive, three were negative, of which one had been treated, one was dry, and one was not scraped deeply enough. 34 non-ulcerated papules gave positive results, and six were negative. Plaques on the tonsils were 14 times positive, once negative. Two plaques on the tongue and 14 papules on the lips or at the angle of the mouth were positive. In these, coarse *spirochæta*, in addition, were regularly found. Impetigo of the scalp gave four positive results, and blood three positive and three negative results. He never found coarse *spirochæta* in glands or in closed efflorescences. In all, 206 syphilitic lesions were examined, 164 with positive and 22 with negative result.

Schaudinn³ contributed another paper on this subject in October. He found *spirochæta pallida* constantly in 70 cases and also in tertiary lesions as granular resting forms. He raises the number of spirals in the typical form to 10-26. He states that the new Giemsa stain is the best for its demonstration and advises preliminary momentary fixation with osmium vapour. He claims that the parasite possesses flagella and possibly a vibratile membrane, though this is not yet clearly demonstrable. As these characters separate *spirochæta pallida* not only from *spirochæta* and spirilla but from all other related forms he adopts the name *spironema* suggested by Vuillemin.³¹

De Souza, jun., and Pereira³² found *spirochæta pallida* in nine primary and secondary cases and in one congenitally syphilitic infant with pemphigus. Cultures in human blood with 5 per cent. each of sodium citrate and sodium chloride were negative.

Reischnauer³³ found *spirochæta pallida* in the liver, spleen, and lungs of a congenitally syphilitic infant.

Hoffmann³⁴ succeeded in infecting four monkeys (two macacis Rhesus and two cercopithecs) with syphilitic blood.

Babes and Pansa³⁵ found *spirochæta pallida* in great numbers in the adrenals and liver of congenital syphilis. They suggest that they are like bacterial flagella and might be demonstrated by similar staining methods. They have found spermatozoa-like bodies in the blood of congenital syphilis.

Oppenheim and Sachs³⁶ succeeded in finding *spirochæta pallida* in 39 hard chancres and papules, failing in 21. They also failed in nine buboes, 21 examinations of blood, 15 roseolar spots, two mucous plaques, seven gummata, and four cases of congenital syphilis. In 42 non-syphilitic conditions they found no *spirochæta pallida*.

Bertarelli and Volpino³⁷ found *spirochæta pallida* in 26 out of 42 primary and secondary cases. By the use of a silver

sypillis. He uses hydro-alcoholic solutions of safranin and violet de dahlia.

Bodin¹⁶ in 37 cases found spirochæta pallida 21 times. He concludes that it is present constantly in untreated developing chancres; in secondary sypillides—papular, papulo-squamous, and ulcerated; and in ano-genital sypillides (condyloma). The organism disappears rapidly under the influence of mercurial treatment, whether general or local, and with local application of antiseptics (all observers do not agree on these points^{17,18}). He has never found spirochæta pallida in tertiary lesions. He finds the spirochæta in constant relation to red blood corpuscles. In conclusion, he thinks that their occurrence so constantly in the lesions cannot be considered merely a coincidence.

Buschke and Fischer¹⁷ have demonstrated clearly the spirochæta in sections by silver impregnation methods. This was first done by Bertarelli and Volpino.⁶³ Levaditi modified the procedure according to the method of Ramon y Cajal and got similar results, but not only in the organs of a congenitally sypillitic infant but also in primary sores and secondary papules of an adult, and, in addition, in a primary sore in a monkey. Paschen demonstrated them by the same method and Buschke and Fischer also adopted it. The details of the method are given. Their successes included a condyloma latum, the liver and spleen in two congenital sypillitics, and the kidneys and cutaneous papules in another. The examination of the liver from a man with tertiary sypillis proved negative.

Taylor and Ballenger²² found spirochætæ pallidæ in two hard chancres and one mucous plaque. Neisser and Baermann¹⁰³ had 27 positive and 12 negative results in man. In four out of 12 monkeys they had positive results.

(To be continued.)

THE SPIROCHÆTÆ FOUND IN SYPHILITIC LESIONS.

By G. M. O. RICHARDS, M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON, R.N.;

AND

LAWRENCE HUNT, M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON, R.N.

1. *Description.*—In THE LANCET of Sept. 30th, 1905 (p 963), we described a spirillum as seen by us in films taken from sypillitic chancres to be of three varieties, and also stated that we had found the finest of these three varieties in blood films taken after the usual precautions of cleaning the skin with alcohol by puncturing the patient's skin through the site of a squamous sypillide. Having examined 200 cases of venereal sore and sypillitic lesions, we have come to the following conclusions in the description of the various spirilla: that in true sypillitic chancres there are to be found (1) straight or slightly bent rods in large numbers; (2) undulating organisms very similar to the first except for their attempts to coil; (3) long delicate wavy spiral organisms, sometimes of great length, exactly similar to the spirochæta Obermeieri; (4) organisms similar to the last, but finer as regards thickness; and (5) lastly, the spirochæta pallida, which is characterized by its straightness and corkscrew form, the turns varying from ten to 30 with pointed ends and immeasurably fine. It is meant to draw a distinction between spiral and corkscrew; the former appear curved on the flat in the same plane, while the latter have turns occupying different levels.

Since the examination of fluid from a sypillitic lesion in a hanging drop we can now account for the first three forms, which are the same organism at different stages of its existence, and is the spirochæta refringens, and so named by Schaudinn and Hoffmann. This organism is a highly refractile body, motile, but when resting appearing as a straight rod and when moving assuming a spiral form. The movements are of two kinds—one consisting of a contraction of the organism starting from the centre and gradually drawing in the spirals, which is followed by a relaxation of these spirals, the organism becoming a straight rod again; the other one of locomotion, and as far as could be ascertained the organism did not move very far. Sometimes they were seen anchored by one end to a leucocyte, the free end swaying to and fro.

The spirochæta pallida we have been unable to see in the

hanging drop. The varieties of form seen in a film from a sypillitic chancre are thus probably accounted for by the state of rest or activity in which the organism existed at the moment the film was made. The fourth variety mentioned above appears to be an intermediate stage between spirochæta refringens and spirochæta pallida, and in films from sypillitic chancre it is often difficult to draw the line between the very spiral refringens and the corkscrew pallida.



Spirochæta refringens. Reproduced from a photograph by Dr H. R. D. Spitta. $\times 1750$.

In an article by McVeeney,¹ which was the first notice in English of these organisms, is an illustration showing spirochætæ from a sypillitic lesion none of which resemble the spirochæta pallida as observed by us, and we should describe all of them as spirochæta refringens, as their spirals are all far too separate and not corkscrew. In the *American Journal of the Medical Sciences* of Jan. 19th, 1906, is a figure that illustrates fairly well the difference between the spirochæta refringens and the spirochæta pallida except that the pallida has not sufficient curls. In the *New York and Philadelphia Medical Journal* of Nov. 4th, 1905, is an article by Fanoni, illustrated by micro-photographs of the spirochæta pallida, which, however, do not correspond to our idea of that organism and we look upon them as being examples of the refringens. In the *Australasian Medical Gazette*, in an article by Munro, are two micro-photographs of spirochætæ showing the pointed ends.

2. *Staining.*—Up to the present we have found that Giemsa's modification of Romanowsky's stain gives the best results and always use it. The stain should be diluted with distilled water 1 in 3 in a watch-glass and pipetted on to the film, previously fixed for ten minutes in alcohol. Application of the stain for five minutes is sufficient, though the most certain results are obtained in 15 minutes. Apparently Canada balsam and cedarwood oil do not bleach the stained organism as some observers have suggested, and specimens now six months old appear as deeply stained as when first prepared. Leishman's stain acts well but is not so intense as Giemsa's. The organism stains with carbol-fuchsin, but the fine varieties cannot possibly be distinguished owing to the general intense staining in a scraping from a sore. Some observers have stated that this stain is the best, but we firmly believe they have no idea of what spirochæta pallida is really like. Carbol-thionin stains spirochæta refringens well but we have not detected spirochæta pallida by this method. Generally the spirochæta refringens stains easily and well but spirochæta pallida stains only very slightly, as does the fourth variety. We intend to try Levaditi's silver nitrate method.

3. *Situations in which found.*—All forms are found in the primary lesion but spirochæta refringens is here marked by its numbers in the superficial discharge, while spirochæta pallida is rarely found unless the lesion is actually scraped. In condylomata and mucous tubercles all forms are seen but again spirochæta pallida is chiefly found by expressing serum from the lesion, in which serum it occurs more abundantly than the refringens. The shotty inguinal glands of the early secondary stage when punctured with a hypodermic needle under strict aseptic conditions supply the best examples of spirochæta pallida, and up to the present we have found no form of spirochæta refringens in this position. In the skin,

having selected a spot of the rash somewhere on the trunk and thoroughly cleansed the site with absolute alcohol, blood expressed after puncture with a needle has in numerous instances been found to contain both *spirochæta pallida* and *spirochæta refringens*. Other observers who have seen our specimens have confirmed the presence of both forms. No contamination was possible in these cases as the glass slide on which the film was made touched the drop of exuding blood only and never came in contact with the epithelium. Furthermore, the cleansing with absolute alcohol was most carefully carried out. We saw no other organisms or foreign matter in these films, and a search of from one to two hours was frequently necessary. Furthermore, if a spot of the rash be similarly sterilised and a blister raised over it by means of strong ammonia the fluid in the blister will be found to contain numerous *spirochæta pallida* and up to the present we have seen no *spirochæta refringens* in this fluid. We have not as yet found the organism in blood films taken from the same patient's finger. The ulcerated throat of the secondary stage, also mucous patches and ulcerations on the lips and commissures of the mouth, show all forms of the organism. Puncture with a hypodermic needle of the tonsil, when enlarged and not necessarily ulcerated, furnishes beautiful specimens of the *spirochæta refringens* and *spirochæta pallida* in their finest forms. We have not found it in any of the following tertiary lesions, ulcer of the leg, gumma of the tongue, tertiary ulceration of the hard palate, and late secondary rupial rash; nor have we found any *spirochæta* in gonorrhœal warts and non-syphilitic chancres. In the smegma we have seen thread-like organism sometimes of branching and wavy form but very easily distinguished from *spirochæta pallida* and *spirochæta refringens*.

4. *Culture*.—All our attempts to grow the organism in broth, agar, or blood serum from blood of patients in which we had previously found the organism have failed.

5. *Theory*.—Our idea is that the *spirochæta pallida* is the real specific organism of syphilis. That the organisms we have described as *spirochæta refringens* are polymorphic forms of the same organism. That the *spirochæta pallida* as we have found it by our constant study of it in all situations in which it has been found tends to be limited to the deeper parts and the internal organs. That the *spirochæta refringens* occurs only on the surface where the disease is manifested by its external lesions. It is possible that the *spirochæta pallida* circulates freely in the blood and that as it develops it becomes *spirochæta refringens*, that this larger organism forms emboli in the capillary circulation, and at the site of these emboli the external lesions of the disease are produced, and the organism undergoes further development for the spread of the disease. In the *Medical Chronicle* for February, 1906, one of us (G. M. O. R.) in recording a number of cases thinks that *spirochæta pallida* in the primary lesion is diagnostic of syphilis. We should like to add that we have never yet seen *spirochæta pallida* in the primary lesion without seeing many more *refringens* and that we regard this organism as diagnostic of *spirochæta pallida*.

OBSERVATIONS ON THE ANIMAL REACTIONS OF THE SPIROCHÆTA OF THE AFRICAN TICK FEVER.

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A Preliminary Note.

THE strain of *spirochæta* used for the following experiments was that discovered by Dr. J. E. Dutton and Dr. J. L. Todd in cases of human tick fever occurring in the Eastern part of the Congo Free State and brought to England by Dr. Todd in the infected monkeys and ticks. Their observations are published in one of the memoirs¹ of

the Liverpool School of Tropical Medicine. From one of the monkeys infected by ticks which died showing numerous *spirochæta* in the blood sub-inoculations were made intraperitoneally into three rats, two receiving five cubic centimetres and one seven cubic centimetres (Experiment 985). The smallest of the rats, about one and a half months old, showed *spirochæta* in the blood at the time of the first examination some 14 hours after inoculation. The number of *spirochæta* increased rapidly until, at the time of the rat's death, which occurred suddenly five hours later, the corpuscles were entirely obscured by the innumerable parasites present in the blood. In the case of the other two rats (both full grown) parasites were present in the blood in small numbers 12 hours after inoculation (one to one to three fields: Zeiss oil immersion $\times 4$, ocular $\times 4$) and were found continuously in large numbers until the rats died, one (985 B) after four days and the other (985 A) after seven days. Sub-inoculations from 985 B were made into two rats, Experiment 990, A getting two cubic centimetres and B one cubic centimetre of blood intraperitoneally. The *spirochæta* were found at the time of the first examination (16 hours after inoculation) in large numbers and increased for four days when both rats died, showing innumerable parasites.

Further sub-inoculations from this have been made and show that the incubation period varies between two and six hours in the rat if blood containing numerous *spirochæta* be used for the inoculations. The incubation period, however, may be prolonged, as is shown in one case, to nine days or even as long as 21 days in another case. The blood used for this inoculation was derived directly from a monkey infected by means of the bites of infected ticks and which had had a short attack, the *spirochæta* being at first present only in small numbers and afterwards absent for two weeks and finally very scarce (one to a preparation) just before death.

The duration of the disease in rats varied between one and 45 days and was increased by the passage of the *spirochæta* through several rats. A noticeable feature in those rats in which the disease ran a longer course was the gradual increase in the number of parasites for a few days until in many cases they were uncountable, followed by a corresponding decrease in number to complete disappearance. After a short period of absence the *spirochæta* again reappeared and the cycle was repeated three or four times before the animal died, but during the "relapses" the number of parasites never rose so high as in the first attack.

From the pathologic-anatomical point of view the most striking feature was a more or less pronounced enlargement of the spleen (sometimes thrice the normal size). Very frequently this organ contained hemorrhagic infarcts of varying size, in some cases involving half the spleen. Often the process had proceeded further and small anemic infarcts were found. The Malpighian bodies were enlarged and greyish in colour. The trabecular system was not pronounced. The liver usually was enlarged and showed hemorrhages under the capsule and in its substance. Small necrotic areas were found scattered through the liver substance. The bone marrow was very soft and of a pale greyish colour. Petechiæ in the serous membranes were frequent.

Six mice were inoculated intraperitoneally with from 0.2 to 0.5 cubic centimetre of citrated blood containing many *spirochæta*. All showed the parasites in the peripheral circulation the following day. Four died during the course of this day showing from one to six *spirochæta* per field; two died after 48 hours with numerous parasites in their blood. At the post-mortem examination the spleen was found to be much enlarged in every case.

Six rabbits were inoculated intraperitoneally with large amounts of heavily infected citrated blood (from 10 to 20 cubic centimetres) from monkeys and rats. The animals usually showed parasites in the peripheral blood within from two to three hours afterwards; the number of these increased, as a rule, for the first day and a half (in one case the *spirochæta* were so numerous that they could not be counted), then decreased until, after three days, the blood examinations were negative. The temperature of the rabbits rose from 100°–101° to 104°–105° F. within about six hours and fluctuated between 105° and 106° F. until the death of the animals, which occurred in from three to ten days. Marked symptoms of malaise were noticeable shortly after the inoculation and continued until death. Sub-inoculations into rats were positive only in the case of one rabbit

¹ Dutton and Todd: The Nature of Human Tick Fever in the Eastern Part of the Congo Free State, Memoir XVII., Liverpool School of Tropical Medicine, Liverpool, 1905.

which died the third day after inoculation. The post-mortem findings were similar to those found in the rats but usually more marked in severity. The spleen was enlarged and showed hæmorrhagic and anæmic infarcts, the liver showed necrosis, and the bone marrow was very soft, and scattered through the reddish marrow were numerous greyish areas.

Four guinea-pigs were inoculated, also intraperitoneally. Two, inoculated with 15 cubic centimetres of blood showing from 20 to 30 spirochæte per field, showed parasites in small numbers the following day (1 to 40 fields) and died on the third day showing in the heart blood from one to ten spirochæte in each microscopical field. The temperature showed a marked rise, reaching 104°. Two, inoculated with five cubic centimetres of infected blood, showed parasites in the peripheral circulation two hours later. The spirochæte increased in number until the next evening, when from one to two per field were seen and then decreased. After the third day the blood examinations were negative. The temperature fell to normal and both are still alive (one 36 days and the other 27 days after inoculation). In the guinea-pigs which died slight enlargement of the spleen was the only visible finding.

One dog (nine months old, mongrel), Experiment 1018, was inoculated intraperitoneally with 15 cubic centimetres of citrated blood showing numerous spirochæte. Two hours later parasites were found in the peripheral circulation; they increased in number till the next evening when there were from five to eight in one field of the stained specimen and then decreased. On the fourth day no parasites were found and the blood has since remained free from spirochæte. Sub-inoculations into rats proved negative. Within six hours of the inoculation the temperature rose from 100° to 103·2° and after the third day fell to normal with no subsequent rise.

One pony, Experiment 1019, was inoculated intraperitoneally on Jan. 16th with 17 cubic centimetres of pure heart's blood from a rat showing from five to 20 spirochæte per field. Seven hours later four spirochæte were seen in one-half of the film specimen of blood. At the same time the number of leucocytes was increased. The parasites increased in number during the next day until, in the evening, from one spirochæta in two fields to from one to 25 parasites per field were seen. They were still present on the third day but on the fourth day had disappeared and have remained absent since. Corresponding to the appearance of the spirochæte the temperature rose from 98·6° to 103°, maintained that level for three days, and fell on the fifth day to 99·8°. No rise of temperature has been observed since.

One monkey, an adult *Cercopithecus*, was inoculated subcutaneously with one cubic centimetre of blood (from 60 to 80 spirochæte per field). Parasites in small numbers were seen in the blood 24 hours later. A corresponding rise of temperature was noticed. The spirochæte increased in number and disappeared after three days. At certain intervals the parasites were seen in the peripheral blood, being present for a few days and then disappearing again.

Monkeys showed blood infection after an incubation period of five days after the bites of infected ticks. In monkeys which died from the infection the spleen and liver were found to be the most markedly changed. The spleen was considerably enlarged and contained anæmic infarcts of varying size and extent corresponding to the duration of the disease. In some cases the spleen substance contained very numerous small necrotic areas about a millimetre in diameter. The liver contained hæmorrhagic areas and small necroses. The bone marrow was soft and greyish-red in colour.

From the above experiments it is apparent that we have been able to infect with the spirochæta of African tick fever in addition to monkeys, a horse, a dog, rabbits, guinea-pigs, rats, and mice. The rabbits, rats, mice, and some of the guinea-pigs have succumbed to the infection. Previous observers have not been able, so far as is known up to the present, to infect any animal other than monkeys with the spirochæta Obermeieri. These experiments lead to the conclusion that the spirochæta of the African tick fever differs from the spirochæta Obermeieri. While the animal reactions are different from those of the spirochæta Obermeieri, the pathological anatomical lesions are the same as those described in human beings who have succumbed to the infection by spirochæta Obermeieri.

THE PRESENCE OF THE SPIROCHÆTA PALLIDA IN SYPHILITIC LESIONS.

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As it is still a debateable point whether the spirochæta pallida is a direct cause of syphilis, I thought it advisable to record briefly the following observations made upon cases of primary, secondary, tertiary, and congenital syphilis. In every case the surface of the syphilitic lesion was carefully cleansed and then firm pressure was applied for a short space of time until a small quantity of serum was evacuated. Film preparations which were made from this fluid were stained by my modification of Leishman's stain as published in THE LANCET of August 19th, 1905, p. 522. The spirochæte by this method stand out quite clearly and definitely and are stained a faint purple colour.

The following is a list of the cases examined by me from July, 1905, until the present time:—

CASE 1.—A child suffering from congenital syphilis. Condylomata were present around the anus. Large numbers of the spirochæta pallida were found to be present.

CASE 2.—A male, aged 20 years, suffering from secondary syphilis. The spirochæta pallida was found to be numerous in film preparations made from the mucous papules in the mouth.

CASE 3.—A female, aged 25 years, suffering from a gummatous ulcer situated on the front of the leg. Film preparations were made from the surface of the ulcer but no spirochæte were found.

CASE 4.—A male, aged 30 years, suffering from a primary chancre on the glans penis. Typical examples of the spirochæta pallida were obtained from the chancre.

CASE 5.—A female, aged 21 years, suffering from general secondary syphilis. No spirochæte were obtained either from the skin eruptions or from two cubic centimetres of blood withdrawn from the patient's thumb into a sterile solution of citrate of soda.

CASE 6.—A male, aged 25 years, suffering from a primary chancre on the glans penis. The spirochæta pallida was present in films made from the chancre.

CASE 7.—A female, aged 40 years, suffering from a syphilitic eruption on the face. No spirochæte were obtained.

CASE 8.—A female, aged 20 years, with a gummatous ulcer on the leg. No spirochæte were seen.

CASE 9.—A child, aged one year and four months, suffering from condylomata around the anus. Numerous spirochæte were found to be present.

CASE 10.—A child, aged one year and two months, suffering from congenital syphilis. Large numbers of the spirochæta pallida were obtained from the condylomata around the anus.

CASE 11.—A male, aged 32 years, suffering from a primary chancre on the penis. No spirochæte were seen.

CASE 12.—A male, aged 40 years, with a gummatous ulcer on the ankle. No spirochæte were observed.

CASE 13.—A female, suffering from a large suppurating swelling on the left side of the mouth which was incised and from the interior large numbers of the spirochæta pallida were found to be present. This swelling was found to be a gummy. The patient also had other evidence of tertiary syphilis.

CASE 14.—A child, aged four years, suffering from a primary chancre on the lip. The spirochæta pallida was found to be present.

CASE 15.—A female, aged 20 years, suffering from a softened gummy of the arm. Three cubic centimetres of fluid were withdrawn from the interior of the mass and centrifuged. Film preparations were made from the deposit but no spirochæte were found.

CASE 16.—A male, aged 32 years, suffering from secondary syphilis. Numerous spirochæte, which resembled the spirochæta pallida, were obtained from mucous patches around the mouth and also the spirochæte of Vincent.

CASE 17.—A female, aged 33 years, suffering from a gummatous ulcer of the leg. No spirochæte were found.

CASE 18.—A male, aged 18 years, suffering from a small

hard chancre on the end of the penis which he had noticed for only a few days. Numerous spirochætae were found to be present.

CASE 19.—A male, aged 25 years, suffering from congenital syphilis, developed a primary chancre on the penis. Numerous spirochætae were seen in film preparations made from the chancre. This interesting case was under the care of Mr. Outhbert S. Wallace, to whom I was much indebted for permission to examine it.

CASE 20.—A male, aged 18 years, suffering from a primary chancre on the penis. Film preparations were made from the chancre and the spirochæta pallida was found to be present.

Large numbers of other cases of suspected syphilis, soft sores, and other varieties of infection were examined, but in no instance was the spirochæta pallida seen. In several instances a small rounded body was noticed at one of the terminal ends of the spirochæta. This was not observed in all the spirochætae, but in many cases was a very noticeable feature.

In conclusion, it will be observed that the spirochæta pallida has been seen in six cases of primary syphilis, two cases of secondary syphilis, one case of tertiary syphilis, and three cases of congenital syphilis, but whether these changes are dependent upon the spirochæta pallida requires the necessary proof before it can be accepted.

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A PROBLEM IN DIAGNOSIS.¹

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I.

THE problem hereunder stated is a good example of the breadth of the field that we doctors have to cultivate, and of the need of taking into consideration, not merely the medical aspect of a case, but the broad facts of the constitution of human nature, in order to interpret rightly the symptoms of disease—at any rate in that department of medicine which deals with disorder of conduct.

I was asked to see a gentleman in a Midland city who was said to be "a chronic, quiet, steady alcoholic," and, on arriving at his house, was received by his wife, the practitioner in charge of the case being temporarily detained elsewhere. The lady seemed to me to have an air of weary resignation, as if she had borne for a long time a burden almost beyond her strength; and from her I gathered that her husband was in bed with a broken leg, having been recently knocked down by an omnibus—an accident not very unlikely to happen to a chronic alcoholic. She made no reference to his drinking habits, and appeared to me cautious and reticent in talking about him, as if she were afraid of making some admission. At any rate, I gained very little information from her in the 20 minutes or so that elapsed before the doctor arrived. From him I learnt that the patient was a man of independent means and of no occupation, a scholar of a celebrated college at Cambridge, and a man of much intelligence and culture. The patient was in the habit of drinking about a bottle of whisky a day, but I gathered that it was not so much his drinking habit, as his curious mode of life, that demanded my attention. He spent the greater part of every day locked up in his own room, and denied himself to everyone. He took, I was told; no interest in anything, and could not be induced to follow any occupation. He had, however—and this seemed contradictory—spent nearly two years in a slum in Birmingham, living in a garret by himself, and devoting himself with energy and zeal, and with no small success, to ameliorating the lives of the slum dwellers. He had continued this life until his health had broken down and he had been obliged to return to his home, his wife and children. It appeared to me difficult to reconcile this life of ardent self-sacrifice with the account that he took no interest in anything; and, as there seemed to be no other feature in the case, and as it was not clear to me why my services had been invoked, or on what point my

advice was needed, I suggested another interview with the wife.

On putting these questions to her, point blank, her answer was,—"My husband is impossible; he takes no interest in anything." Inquiring as to specific subjects, however, I found that he did in fact interest himself in certain important matters. He interested himself in the education of his children; in the choice of proper schools for them; in the *locale* of the summer holiday; and in other matters; but still "not as another man would." He used to be very social; and now he shunned society altogether. He took no interest in his pecuniary affairs and allowed his brother to manage them for him. On further inquiry, I found that the "impossibility" did not consist in coming home drunk, using violence to his wife, or making scenes with the servants or visitors; nor was he unbearably ill-tempered or irritable. He was never really drunk, although he drank a great deal. There appeared to be nothing very tangible or positive; all that was specifically complained of was his lack of interest. All this was very unenlightening and unsatisfactory; but the "impossibility," whatever its nature, was so real that his wife had once obtained a separation from him and was now contemplating another.

I then visited the patient. I found him in bed, with his leg in splints; a fine, well-made, athletic, healthy-looking man, about 40 years of age. He received me with well-bred ease and courtesy, and answered all my questions with engaging frankness and candour. There was not, either in his appearance or in his manner, or in anything he said or did, anything that in the least suggested unsoundness of mind. "Yes, he had been knocked down by an omnibus; near his own home. Could not say how it happened. Supposed he was mooning along, and not attending to what was going on about him. Was not drunk. No, could not say he was in the habit of mooning along like that, but supposed he sometimes did so. Yes, it was quite true that he had no interest in life; could not account for it, but so it was; had been so for some years. Yes, he spent a good deal of time locked up in that room. What did he do? Went to sleep most of the time (laughing). Yes, he drank,—drank about a bottle of whisky a day. Kept up the practice all the time he was living in the slums. Supposed I might say he had been successful there,—well, very successful, if I liked. No, in spite of that, he could not say he took any interest in the work. Meant to go back to it, though, as soon as he was well enough. Why did he drink? Really couldn't say. No, he had no craving for it. No, it was not a necessity to him. To drown his trouble? Well, perhaps it was. What trouble? Couldn't say he had any particular trouble. *Tedium vite*? Well, yes, he supposed so. No, no reason for it, merely he could not interest himself in anything. As a pick-me-up? No, didn't think he drank on that score."

There was nothing very enlightening in this; so I took him over his past life. "Oh! no; he was not always without interests. Used to live in the country, and took great interest in country pursuits. Hunted a good deal; was a magistrate, and chairman of the county council. Gave all this up, and came to this city, where, it was true, he was comparatively nobody. Why? Well, he had mechanical tastes,—that bureau there was full of models, mostly unfinished, and he hoped to get into touch with manufacturers. No, he had not patented anything yet. Could not say the disappointment had afflicted him much, but perhaps it had. Might be the cause of his drinking,—couldn't say. Travelled? Yes, he had been to the West Coast of Africa. Yes, the West Coast. Yes, he supposed it was odd to choose 'the Bight of Benin, where one comes out where a hundred go in.' No, did not go on business; no, nor exactly for pleasure; no, nor for scientific investigation. What did he do there? Lectured to the blacks. Like it? No, he didn't like it. Came back after a while, tired of it. Then he had been in Manchuria. Yes, during the war. I read in the papers an account of the Yalu, and I said 'That's the place for me.' Did not stay long, however. Was summoned home on urgent business. Then he took to slumming. Carried on a kind of little Toynbee Hall, by himself, and supposed I might say he had been successful. Couldn't say he took much interest in it though. Couldn't take interest in anything. Yes, he was going back as soon as he recovered, and had got a man to take his place while he himself was away."

His vital organs were sound; his digestion was good; his urine was normal. He had been seen by many physicians, but no definite diagnosis appeared to have been made, and

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no definite treatment recommended. The journey to the West Coast of Africa might have been made on the routine advice to take a sea voyage. He talked freely, answered every question without a moment's hesitation, and with a candour and openness that were quite captivating. He laughed lightly at his own infirmity, treating it as a thing inevitable; deplorable indeed, but inevitable and unaccountable, and a thing that must be endured. Subsequently I learnt that the urgent business that brought him home from Manchuria was the suicide of a sister. There was probably, therefore, some insanity "in the family." The tension which was revealed in his wife's expression had no counterpart in his own; and he did not appear much concerned about himself; nor had he the egotistic self-concentration of insanity. He spoke with natural affection of his wife and children, and with regret of the anxiety that his malady caused them.

What was the nature of the case?

II.

In spite of the winning candour of the patient and the absence of any sign of reticence on his part, which forbade me, while I was in his presence, to suppose he was keeping anything back, I had no sooner left the room than the conviction forced itself upon me that there was some feature in the case that had not yet been revealed. The wife's demeanour had suggested this at first, and the patient's condition—his lack of interest in life, the only definite complaint, if definite it could be called, that was made either by his wife or by himself—was so uncalled for and unaccounted for, and was, moreover, so much at variance with his demeanour and lively conversation, that I was driven to suppose that there must be some factor that had been kept concealed. My conviction was so strong, that the first remark I made to Dr. F. in our consultation was, "They are both lying. There is something we do not know."

The case was as different from a case of melancholia as any case could possibly be. The man exhibited no depression whatever. He had none of the aspect or manner of a melancholy man; and he was not self-centred. He could talk at large of other things and other people besides himself. There was no morbid self-consciousness or self-absorption. There was none of the concealed self-depreciation of the melancholic. No, the explanation must be sought in another direction. His whole mind, as revealed in his conversation, was so sound and clear, that I was driven to the conviction that his lack of interest in life depended on a real reason, not an imaginary one, and that this reason he was withholding and concealing under his charming air of candour and *bonhomie*. And this reason was of great efficiency. For why the journey to the West Coast of Africa? Why did the account of the Yalu convince him that Manchuria was "the place for him"? Why the omnibus accident? Was it not clear, was it not at any rate highly likely, that these were three several attempts to end his life? He could, or would, give no reason for visiting the Gold Coast, notoriously one of the most unhealthy places in the world. His resolution that Manchuria was the place for him was made after reading of the horrible slaughter on the Yalu. And his account of the omnibus accident was childishly inadequate. There was, then, not merely a passive lack of interest in life, but an active desire to terminate it, which pointed to some very grave character in that concealed factor which it was my business to discover. It was concealed, therefore it was discreditable. It was worse than drunkenness, for he freely admitted that he drank, and people do not attempt suicide because they are ashamed of being drunkards. He drank, too, not because he had any craving for drink, nor as a pick-me-up, but "to drown his trouble." That half-laughing admission was true. There is many a true word spoken in jest. Such an hypothesis accounted for his solitary habits; for his shunning of society, for his locking himself up in his room to brood over his trouble. If his wife was aware of it, it would account for her tense expression,—she was manifestly on the verge of a breakdown. Evidently it was something which he at least, and probably she also, regarded as very disgraceful. What was it? A drug habit? The notion crossed my mind only to be dismissed. He had not the appearance or manner of the victim of any drug habit known to me; and, although drug habit often leads to suicide, the suicide is involuntary. Moreover, if he were reticent about it, there was no reason why his wife should be reticent about it; and to boot, the hypothesis had already been considered and dismissed by

the practitioner in charge of the case. Was it, then, some moral delinquency? Was he, for instance, a fraudulent trustee? This would account for the wife's tension and reticence; but this hypothesis would not hold water; for, in the first place, pecuniary anxiety simulates melancholia very closely, and this man was not in the least like a melancholic; and, in the second, his pecuniary affairs were in the hands of his brother. There remained, it seemed, but one alternative,—there was some sexual anomaly. Was he a sexual pervert? Was the slumming experience a blind, and a means of obtaining opportunity for the indulgence in unnatural vice? This would be consistent with the shunning of reputable society, and with the apprehension and anxiety of the wife; this would render him "impossible," indeed; but then there were the attempts at suicide. It might seem that the knowledge, that a man is addicted to such repulsive and reprobate vice, would excite in him such self-contempt and self-aversion as to drive him to seek oblivion in suicide; but this is not so in experience. Persons, who pursue these practices, pursue them with avidity, and are not disturbed or deterred by any *vivid sense of shame*. They seldom hesitate to admit the practice. They are, it is true, addicted to low associates, and they do shun their social equals, but they are never, in my experience, suicidal. Moreover, such persons usually present a recognisable *facies*, often of an *epicure character*, which gives the observer reason to suspect their proclivity. The author of *De Profundis* was recognisable, and recognised, by his appearance alone, as likely to be addicted to these practices, long before his trial put the fact beyond question. There was no such feature in the case under consideration; and, even when my suspicions were aroused, I could not but regard the explanation as improbable, having regard to my observation of the man.

Rejecting this, there seemed to be but one possible explanation remaining. He must be impotent; or, what is the same thing for the purpose in view, convinced that he was impotent. On consideration, this hypothesis explained everything. It accounted for the secretiveness, the mystery, the loss of interest in life, the drinking to drown trouble, and the attempts at suicide. It seems unreasonable that it should be so, but it is an undoubted fact that nothing is so provocative of self-contempt and self-abasement, of shame and humiliation, as a man's belief in his own impotence. Such a belief would account for the shunning of society; for the solitary days, locked in his room, and brooding over his trouble; for the craving for oblivion in drink; and for the attempts at suicide. Moreover, it would account for the peculiarity, otherwise inexplicable, the devotion to slumming. The deprivation or the renunciation of sexual life is always closely connected with the display of self-sacrifice and self-renunciation in other respects. We see the combination in the monk and the nun; in the celibate priest who submits in all things to the authority of his Church; in the asceticism and self-mortification, in the not infrequent suicide, of the disappointed in love; in their retirement from the world to a life of seclusion and austerity in monastery and convent. Loss of interest in life and retreat from society would be the natural consequences of impotence in one who took the deprivation much to heart. And this hypothesis was consistent with the demeanour of the wife. It was true that there were children, but the youngest was seven years old. He could not always have been impotent, therefore, but he might be so now. It is true that he was fairly animated, and was certainly not melancholy during our interview, but so is many a man gay and *insouciant* on his way to execution.

I felt confident that here, at last, I had a clue to the mystery. The patient was taxed with his infirmity—he burst into tears as he admitted it. I asked his wife if it was so,—and obtained her corroboration. I may add that he admitted that his expeditions abroad were made with suicidal intent.

Wimpole-street, W.

EXHIBITION OF H.M.S. "BLACK PRINCE."—£1100 have been realised by the exhibition of this ship which, by the kindness of the Thames Ironworks Ship-building and Engineering Company, was recently on view for the benefit of the Seamen's Hospital Society and the Poplar and West Ham Hospitals. During the three afternoons when the vessel was open to inspection it was visited by over 21,000 persons.

hard chancre on the end of the penis which he had noticed for only a few days. Numerous spirochæte were found to be present.

CASE 19.—A male, aged 25 years, suffering from congenital syphilis, developed a primary chancre on the penis. Numerous spirochæte were seen in film preparations made from the chancre. This interesting case was under the care of Mr. Cuthbert S. Wallace, to whom I was much indebted for permission to examine it.

CASE 20.—A male, aged 18 years, suffering from a primary chancre on the penis. Film preparations were made from the chancre and the spirochæta pallida was found to be present.

Large numbers of other cases of suspected syphilis, soft sores, and other varieties of infection were examined, but in no instance was the spirochæta pallida seen. In several instances a small rounded body was noticed at one of the terminal ends of the spirochæta. This was not observed in all the spirochæte, but in many cases was a very noticeable feature.

In conclusion, it will be observed that the spirochæta pallida has been seen in six cases of primary syphilis, two cases of secondary syphilis, one case of tertiary syphilis, and three cases of congenital syphilis, but whether these changes are dependent upon the spirochæta pallida requires the necessary proof before it can be accepted.

St. Thomas's Hospital, S.E.

A PROBLEM IN DIAGNOSIS.¹

By CHARLES A. MERCIER, M.D. LOND., F.R.C.P. LOND.
PHYSICIAN FOR MENTAL DISEASES AT CHARING CROSS HOSPITAL.

I.

THE problem hereunder stated is a good example of the breadth of the field that we doctors have to cultivate, and of the need of taking into consideration, not merely the medical aspect of a case, but the broad facts of the constitution of human nature, in order to interpret rightly the symptoms of disease—at any rate in that department of medicine which deals with disorder of conduct.

I was asked to see a gentleman in a Midland city who was said to be "a chronic, quiet, steady alcoholic," and, on arriving at his house, was received by his wife, the practitioner in charge of the case being temporarily detained elsewhere. The lady seemed to me to have an air of weary resignation, as if she had borne for a long time a burden almost beyond her strength; and from her I gathered that her husband was in bed with a broken leg, having been recently knocked down by an omnibus—an accident not very unlikely to happen to a chronic alcoholic. She made no reference to his drinking habits, and appeared to me cautious and reticent in talking about him, as if she were afraid of making some admission. At any rate, I gained very little information from her in the 20 minutes or so that elapsed before the doctor arrived. From him I learnt that the patient was a man of independent means and of no occupation, a scholar of a celebrated college at Cambridge, and a man of much intelligence and culture. The patient was in the habit of drinking about a bottle of whisky a day, but I gathered that it was not so much his drinking habit, as his curious mode of life, that demanded my attention. He spent the greater part of every day locked up in his own room, and denied himself to everyone. He took, I was told, no interest in anything, and could not be induced to follow any occupation. He had, however—and this seemed contradictory—spent nearly two years in a slum in Birmingham, living in a garret by himself, and devoting himself with energy and zeal, and with no small success, to ameliorating the lives of the slum dwellers. He had continued this life until his health had broken down and he had been obliged to return to his home, his wife and children. It appeared to me difficult to reconcile this life of ardent self-sacrifice with the account that he took no interest in anything; and, as there seemed to be no other feature in the case, and as it was not clear to me why my services had been invoked, or on what point my

advice was needed, I suggested another interview with the wife.

On putting these questions to her, point blank, her answer was,—"My husband is impossible; he takes no interest in anything." Inquiring as to specific subjects, however, I found that he did in fact interest himself in certain important matters. He interested himself in the education of his children; in the choice of proper schools for them; in the *locale* of the summer holiday; and in other matters; but still "not as another man would." He used to be very social; and now he shunned society altogether. He took no interest in his pecuniary affairs and allowed his brother to manage them for him. On further inquiry, I found that the "impossibility" did not consist in coming home drunk, using violence to his wife, or making scenes with the servants or visitors; nor was he unbearably ill-tempered or irritable. He was never really drunk, although he drank a great deal. There appeared to be nothing very tangible or positive; all that was specifically complained of was his lack of interest. All this was very unenlightening and unsatisfactory; but the "impossibility," whatever its nature, was so real that his wife had once obtained a separation from him and was now contemplating another.

I then visited the patient. I found him in bed, with his leg in splints; a fine, well-made, athletic, healthy-looking man, about 40 years of age. He received me with well-bred ease and courtesy, and answered all my questions with engaging frankness and candour. There was not, either in his appearance or in his manner, or in anything he said or did, anything that in the least suggested unsoundness of mind. "Yes, he had been knocked down by an omnibus; near his own home. Could not say how it happened. Supposed he was mooning along, and not attending to what was going on about him. Was not drunk. No, could not say he was in the habit of mooning along like that, but supposed he sometimes did so. Yes, it was quite true that he had no interest in life; could not account for it, but so it was; had been so for some years. Yes, he spent a good deal of time locked up in that room. What did he do? Went to sleep most of the time (laughing). Yes, he drank,—drank about a bottle of whisky a day. Kept up the practice all the time he was living in the slums. Supposed I might say he had been successful there,—well, very successful, if I liked. No, in spite of that, he could not say he took any interest in the work. Meant to go back to it, though, as soon as he was well enough. Why did he drink? Really couldn't say. No, he had no craving for it. No, it was not a necessity to him. To drown his trouble? Well, perhaps it was. What trouble? Couldn't say he had any particular trouble. *Tedium vitæ*? Well, yes, he supposed so. No, no reason for it, merely he could not interest himself in anything. As a pick-me-up? No, didn't think he drank on that score."

There was nothing very enlightening in this; so I took him over his past life. "Oh! no; he was not always without interests. Used to live in the country, and took great interest in country pursuits. Hunted a good deal; was a magistrate, and chairman of the county council. Gave all this up, and came to this city, where, it was true, he was comparatively nobody. Why? Well, he had mechanical tastes,—that bureau there was full of models, mostly unfinished, and he hoped to get into touch with manufacturers. No, he had not patented anything yet. Could not say the disappointment had afflicted him much, but perhaps it had. Might be the cause of his drinking—couldn't say. Travelled? Yes, he had been to the West Coast of Africa. Yes, the West Coast. Yes, he supposed it was odd to choose 'the Bight of Benin, where one comes out where a hundred go in.' No, did not go on business; no, nor exactly for pleasure; no, nor for scientific investigation. What did he do there? Lectured to the blacks. Like it? No, he didn't like it. Came back after a while, tired of it. Then he had been in Manchuria. Yes, during the war. I read in the papers an account of the Yalu, and I said 'That's the place for me.' Did not stay long, however. Was summoned home on urgent business. Then he took to slumming. Carried on a kind of little Toynbee Hall, by himself, and supposed I might say he had been successful. Couldn't say he took much interest in it though. Couldn't take interest in anything. Yes, he was going back as soon as he recovered, and had got a man to take his place while he himself was away."

His vital organs were sound; his digestion was good; his urine was normal. He had been seen by many physicians, but no definite diagnosis appeared to have been made, and

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Wales and we shall always look back with grateful appreciation to the honour conferred upon us by His Royal Highness's presence at our banquet and by the warm recognition of the century's work of the society in the course of the toast and for the welfare of the public, which graced the eloquent and sympathetic speech with which he favoured us on that occasion. We have also in the past year received an encouraging accession of new Fellows. The financial position of the society is good and the generous contributions to the Centenary Celebration Fund have enabled our treasury to bear all the expenses of the year and yet to contribute more largely than usual to the Library and to the repayment of debentures. I would take this opportunity to remind the Fellows that however materially well-to-do this society may be or may become its real prosperity must depend upon the number and spirit of its Fellows and that it is by the continual accession of new Fellows to replace those that are gone that its intellectual wealth, as well as its material prosperity, are maintained. It is within the power of each Fellow to bring the claims and advantages of the society under the notice of colleagues and friends and to bring them into the Fellowship. It is very gratifying to the Council to be able to record such a complete success for our centenary celebration in May last and I say here formally but very sincerely to express the indebtedness of the society to the various organisations sub-committees of the Council, to the honorary secretaries, to the secretary and his staff of officials, including Miss Williamson, for their zeal and industry, which made everything pass off so well. One of our honorary librarians, Mr. Godlee, took great interest and pains in securing through his friend Mr. Ashbee a very handsome design for the centenary diploma and we have to thank Mr. Partridge, the son of a former President of the Society, for a very artistic design for the banquet table cards. I must also again express our thanks to our honorary librarian, Dr. Norman Moore, and to our honorary secretary, Mr. Platt, for the production of the centenary volume, recording the history of our society within the 100 years upon which the festival celebration was based and justified. The ordinary work of the society has included many interesting and valuable papers fully on a level with those of former years. It may, I think, be affirmed that the discussion on appendicitis brought together a mass of statistical information and a volume of well-matured experience that could scarcely have been at the command of any society but this, and that it has enabled for many years to come the lines both of medical and surgical procedure with regard to the most critical aspects of appendicitis. Another series of papers, very amply illustrated, brought fully before the profession the question of a rational and scientific method upon which the treatment of tuberculosis by tuberculin should be based. It was contended that the tuberculin treatment of tuberculosis should be effected upon lines in accordance with those upon which the treatment of certain other diseases that have their origin in the actions of specific organisms were founded—viz., measures calculated to increase the bactericidal influence of the blood serum upon such organisms and thus permitting of greater phagocytic activity on the part of the white corpuscles. The treatment of tuberculosis by tuberculin originated by Koch was so far an empiricism that it was in advance of any ordered reasoning, it was a speculative treatment although based, it is true, upon the principles of his great discovery. The treatment now again initiated necessarily awaits further experience in order that its limitations may be better defined, its combination with other measures of treatment, surgical and medical, more clearly recognized, and, above all, in order that a more easily recognizable clinical index may be obtained which will enable the treatment to be safely carried out without constant and expensive, and often unnecessary, reference to the bacteriological expert. We were also favoured in the Marshall Hall prize essay, which was communicated to us at a special meeting in the Centenary week, with a remarkable output of prolonged patient, and I may truly say, self-sacrificing work—for much of the virological experiments was made upon the author himself—which has advanced our knowledge in an important manner, especially with regard to the phases of loss and restoration of sensation in cases of nerve injury and repair. In working papers, then, as in finance, the society may be truly said to be in a sound condition. With regard to the question which I raised in my last annual address and which was so cordially and generously

accepted for consideration by this society and by many others—viz., that of a possible union of the central London medical societies for greater economy and more comprehensive and efficient work, I may say that the scheme is still in progress, very many committee meetings have been held under the presidency of Sir William Church, and much has been done towards the attainment of a working plan of amalgamation. The negotiations have been delicate and sometimes difficult, but in the existence of what I believe to be a conviction amongst the members of the different societies, that in union we shall find strength and greater efficiency in forwarding the interests of medical science, and with the impetus of will and I hope goodwill power amongst them, I believe that the union will be triumphantly effected. It is quite clear that before any actual coalition of the societies in agreement takes place very careful estimates based on exact valuations of the assets of each society must be made in order to place the new society on a sound financial foundation. The upkeep of the new society must depend upon the subscriptions of Fellows and Members and with a large Fellowship there can be no anxiety on this head. The income-producing property must be estimated on realisable assets only and probably reserved as a fund for special scientific requirements. The market value of books and museums can scarcely enter into such estimates, not overthunders the library, which should be the best in the world, must be a chief attraction and the most really valuable asset of such a society. I have no misgivings myself as to the possibility of bringing about this much-needed union. Apart, however, from any amalgamation scheme, and, indeed, perhaps as a part of any such scheme, my experience as a past secretary and as now, also, also a past President of this society, leads me to say that I think the society needs some expansion and development in certain directions which were indeed contemplated at its foundation. Its meetings have long been too exclusively of a formal kind. Undoubtedly the two great objects of the society are a perfect medical and scientific library and the production of first-rate papers and discussions which its resources enable it to publish and to illustrate with every necessary fulness. But the society did not originally contemplate that every meeting should, so to speak, be a full-dress one. It had in view instructive conversational meetings over an interesting case, a new discovery, or a new method of treatment, and I venture to think that if an evening were sometimes devoted to the conversational consideration of a few interesting cases, specimens, or demonstrations of objects of medical interest, such as one sees to be the nucleus of a group of busy brains at odd corners at a Royal Society soirée, it would not be misapplied, and that a more formal paper read at some subsequent meeting on a subject thus less formally ventilated would meet with more sympathetic and full consideration. The organization of these less formal gatherings would, no doubt, involve some extra work, skill, and enthusiasm on the part of the honorary secretaries but these qualities may be safely reckoned upon and have never been found wanting. There used in my day at the pathological and clinical societies to be a clique of working pathologists and clinicians who met together at one another's houses after the formal meetings of the societies and discussed informally the events of the evening. They were interesting, entertaining, often lively, meetings and, I think, useful. Certain lessons of the evening were sometimes inculcated with greater emphasis than could be done at a public gathering. I remember that the editors of some of the journals were correspondents members and although they left their notebooks behind I have no doubt they acquired some useful information of the trend of medical thought at those informal gatherings. I think there might be found within our society's premises a room for post-medico-surgical gatherings of this kind, consisting of members qualified by a certain standard of Fellowship and work at the society. I believe such an inner or outer circle properly organised on liberal lines would attract Fellows and stimulate them to good work in the society. And the same remark would apply to any new society that might be founded upon its association with other societies. It only remains for me now to say how keenly I have appreciated the friendly and courteous support I have always received from the Council and Fellows of the society during the somewhat difficult year of office that I have now completed. I shall always treasure the memory of the presidency as one of my proudest attainments as well as of my most pleasant experiences.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF BILHARZIOSIS OF THE VERMIFORM APPENDIX.

BY G. LYDSTON CRIMP, M.B., B.C. CANTAB.,
LATE DEPUTY FOR PROFESSOR OF PATHOLOGY, GOVERNMENT MEDICAL
SCHOOL, CAIRO.

IN THE LANCET of Feb. 10th, p. 368, there appeared an article by Dr. J. Burfield and Mr. E. H. Shaw describing a case of the above disease. Of the presence of bilharzia ova there can be no doubt from Mr. Shaw's description but the deductions drawn therefrom are open to the strongest criticism. The writers first quote Dr. F. M. Sandwith's popularised compilation on the subject in favour of infection of man taking place through drinking water, and then end up by assuming a direct local infection of the gluteal sinus, which two ideas are in diametrical opposition to one another and yet are probably—nay, almost certainly—both incorrect. A considerable body of evidence, which would be out of place in this short note, has been adduced to show that the mouth is *not* the channel of infection (incidentally one might note that the myracidium does *not* hatch out "in about half an hour after the ovum is voided in the urine," unless the urine be considerably diluted with pure water—the necessary factor in the hatching process).

The suggestion of immediate infection of any locality, whether skin, urethra, anus, vulva, &c., is absolutely without a shred of support, either pathological or helminthological. Note that I say immediate. This does not deny the possibility of infection by these channels but it does deny the reference of any local lesion to the immediate influence of local attack. To make myself clearer, Dr. Looss¹ shows evidence, conclusive to a helminthologist, that direct metamorphosis of the myracidium into the adult worm *in situ* cannot occur; that the existence of an intermediate generation is predicated by the presence of typical germinal masses (Keimballen) in the posterior part of the body cavity of the myracidium; and that the only question is where the intermediate generation is to be sought. Other evidence goes to show that the liver provides the necessary home. From there, the young adults, male and female, pass into the portal veins (? also elsewhere), mature, copulate, and work their way into various regions (among which the rectum and urogenital organs predominate), there to lay their eggs which are the efficient cause of the local lesions of bilharziosis.

Dr. Burfield and Mr. Shaw would explain the symptoms in the case quoted by the supposition of a localised bilharzial infection of an open-appendicular sinus. This has, I think, been rendered inadmissible; but why not assume that the patient's original abscess was due to the ravages of bilharzia? In the *Journal of Tropical Medicine* of March 1st, 1905, I drew attention to the not infrequent occurrence of appendicular infection and published a photograph of an appendix so affected. This note has presumably escaped the attention of the writers. On numerous occasions have I seen in life and on the post-mortem table sinuses tracking far and wide from visceral bilharzial lesions—one particularly that I can call to mind, having begun extraperitoneally in the cavum Retzii from ulceration through the bladder wall and having tracked up submurally to the umbilicus where it communicated with the exterior.

Cancer Hospital, Fulham-road, S W.

A CASE OF VAGINAL CYSTS.

BY WILLIAM P. GOWLAND, M.B., B.S. LOND.,
ASSISTANT MEDICAL SUPERINTENDENT, ISLEWORTH INFIRMARY.

THE following case seems worthy of record in view of Dr. H. Macnaughton Jones's interesting paper which appeared in THE LANCET of Feb. 24th, p. 513.

The patient, who was a multipara, 38 years of age, complained of "bearing-down" sensations which on examination were found to be due to two vaginal cysts. One of these was as large as a hen's egg and situated about half way up on the left postero-lateral aspect of the vagina, while the second one was of about the size of a grape and situated opposite the first one on the right side. The patient stated that five years ago she had a very difficult labour, the child being large, and she assigned the commencement of her symptoms to this date. She had been confined three times since and mentioned that her medical man attributed a difficult delivery the last time to the presence of the cysts. I thought that the cysts might therefore have possibly arisen by effusion of blood or serum into the connective tissue of the vagina during labour (one form of the accidental vaginal cyst of Rutherford). I dissected both cysts out with difficulty and incompletely. The contents were gelatinous. Portions of the cyst wall were sent to the Clinical Research Association and Mr. J. H. Targett reported as follows: "Both cysts are of the same structure. On one surface—portion of stratified squamous epithelium of vagina. On other surface—single layer of columnar epithelium of varying height (probably due to pressure within cyst) and in places distinctly ciliated. Between the two fibro-muscular tissue which, in the case of the larger cyst, is considerable in amount. The cysts are probably of Gärtnerian origin."

The following seem to me to be the points of interest in the case: (1) the history leading to the suspicion that an "accidental cyst" was present though the subsequent microscopical examination disproved this; (2) the character of the epithelial lining of the cysts, it being columnar and in part ciliated; (3) the symmetrical position of the cysts pointing to origin from a bilateral structure; and (4) the possibility of these cysts causing difficulty in labour.

I am indebted to Dr. W. A. Carline, senior surgeon to the Lincoln County Hospital, for permission to publish the case.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Annual General Meeting.—Election of Officers.—President's Address.

THE annual general meeting of this society was held on March 1st, Sir RICHARD DOUGLAS POWELL the President, being in the chair.

The report of the council, together with the honorary treasurers' audited accounts, was presented and adopted. A ballot for the election of officers and council for the ensuing year took place and the following were elected:—President: Mr. J. Warrington Haward. Vice-Presidents: Dr. Thomas Buzzard, Dr. Joseph Frank Payne, Mr. Herbert William Page, and Mr. W. Harrison Cripps. Honorary treasurers: Sir William Selby Church, Bart., and Mr. Alfred Pearce Gould. Honorary secretaries: Dr. Howard Henry Tooth and Mr. Stephen Paget. Honorary librarians: Dr. Norman Moore and Mr. Rickman John Godlee. Members of Council: Dr. Theodore Dyke Acland, Dr. Edwin Clifford Beale, Dr. Sidney H. C. Martin, Dr. George Ogilvie, Dr. William Pasteur, Mr. John Bland-Sutton, Mr. Andrew Clark, Mr. Clinton Thomas Dent, Mr. Walter H. H. Jessop, and Dr. Henry Roxburgh Fuller.

The retiring PRESIDENT in his annual address said: In the year that has gone by we have been busy looking back upon the achievements of the past century, looking forward to possible developments in the future, and doing the work that has come to hand. We have suffered the loss of ten Fellows by death: Mr. E. T. Truman, Dr. Eustace Talbot, Mr. F. J. Gant, Dr. J. W. Ogle, Mr. Christopher Heath, Mr. J. A. Kingdon, Dr. William Ogle, Dr. William O'Neill, Mr. P. R. Oresswell, and Sir J. Burdon Sanderson, and of two honorary Fellows, Professor A. Kölliker and Professor H. Nothnagel, and how great that loss has been I have endeavoured to show in the brief and too imperfect references to them that I have made. The past centenary year, however, will ever be memorable for the election into the Honorary Fellowship of the Society of H. R. H. the Prince of

¹ Handbuch der Tropenkrankheiten.

In general peritonitis the results were improving but the mortality was still high. Early operation might save a few cases from fatal complications but was itself a cause of greater loss of life. For those who adopted the view that early operation was the best there should be no half measures. The essence of the practice was immediate operation in every case. It was a comfortable doctrine and saved the surgeon from all anxiety as to the right time to operate but he could not subscribe to it as he felt sure it was not the best thing for the patient.—Mr. R. W. MURRAY spoke in favour of early operative interference. In an urgent case the operation should be performed at once. If the symptoms were of a less urgent nature the operation might be postponed for a few days. The dangers of the operation were known to be slight and were for the most part avoidable; whereas the dangers of delay were unknown and unavoidable. He considered the administration of morphine inadvisable, for the drug tended to impair the movements of the intestines, and the great omentum, which had been proved to contain a host of phagocytes, depended upon the intestines for its locomotion and might thus be prevented from arriving at the seat of the disturbance and so from localising the trouble.—Mr. E. M. STOCKDALE thought that the improvement in the statistics of general peritonitis might be attributed to the fact that cases were nowadays sent earlier to the surgeon so that more cases might be classed as "diffuse" rather than "general" peritonitis. He related the case of a youth, aged 20 years, who died within ten hours of the bursting of an abscess in connexion with the appendix, the symptoms of general septic absorption being so severe as to preclude operation.—Mr. G. P. NEWBOLT considered that the Trendelenburg position, with the patient lying on the left side, prevented the small intestines and omentum from getting into the way and much facilitated the operation. He drew attention to the occurrence of bladder symptoms in the early stages of the attack and remarked that it was often the best plan to separate the appendix from the base to the apex in troublesome cases. He favoured the "interval" operation and did not remove the appendix in cases of suppuration unless it lay exposed in the cavity of the abscess.—Dr. W. BLAIR BELL would remove every appendix within 24 hours of the onset of an attack if the case was seen in time. There was no more danger in this proceeding than in the "interval" operation, while it was the means of saving cases which might go from bad to worse; further, it did away with the possibility of abscess formation, fecal fistula, hernia, &c. Concerning the after-treatment, he thought that the use of frequent saline injections per rectum added to the patient's comfort and prevented various thromboses. He was much impressed with Professor A. E. Wright's vaccine treatment as a means of raising the patient's protective power in bad septic cases, cases in which the skill of the surgeon was quite secondary to the patient's own immunising powers.—Mr. T. C. LITTLE JONES, while congratulating the President on the gratifying results which he obtained by the "interval" operation, pointed out that the whole difficulty lay in diagnosing those cases which would go on to suppuration or general peritonitis. At all times he relied on the pulse for guidance and made a point of examining the rectum in every case. He also drew attention to a discharge of mucus which preceded perforation of the bowel. Unless the peritoneal fluid was of that abundant, thin, easily diffusible character which had already probably infected every part of the peritoneum he did not wash out but relied on careful scrubbing. He also advised that where possible the abdomen should be explored for other lesions. In a case just convalescent the youth was operated on for general peritonitis and free gas, but Meckel's diverticulum presented in the wound; this having been irrigated and sutured, the appendix containing pus and an inch-long bristle was removed. Further exploration revealed a large perforated duodenal ulcer, the pus from which was kept within limits by adhesions to the under surfaces of the liver, the diaphragm, the gall-bladder, and the omentum. The pus was swabbed out, the abdomen was closed, and the patient made an uninterrupted recovery.—Dr. GILLAN said that the great majority of cases of acute appendicitis treated by absolute rest, starvation diet, and rectal enemata recovered; he believed small doses of morphine were of great benefit provided the temperature and local conditions were closely watched. He never gave purgatives. He agreed with the President that the interval was the best time for

operation on recurrent cases.—Sir JAMES BARR, Mr. DANIEL HARRISON, Captain DOUGLAS, Dr. J. HILL ABRAM, Dr. E. T. DAVIES, Dr. H. HARVEY, Mr. A. E. DAVIS, Mr. G. WESTON, and Dr. R. J. M. BUCHANAN also took part in the discussion.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The provincial quarterly meeting of this association was held on Feb. 23rd at the West Riding Asylum, Wakefield, Yorks, through the kindness and courtesy of the director, Mr. W. Bevan Lewis, Dr. T. Omtersen Wood, the President, being in the chair.—The President read a paper upon the State Registration of Mental Nurses and referred to the findings of the special committee appointed by the late Government, which recommended a special register for mental nurses and that the Medico-Psychological Association should be one of the authorities concerned in dealing with the register. He urged support for the Bill now being promoted by the Royal British Nurses' Association.—The Bishop of Wakefield addressed the meeting and expressed his warm advocacy for anything which might raise the status of asylum-trained nurses. He spoke with personal knowledge of their duties and of the tact and sympathy required in dealing with mental cases. He considered the vocation of the nurse to be a high and exalted one and he referred to the great progress in nursing sickness and disease which had been made within the last 20 years. He was himself greatly concerned with the problem of the prevention of disease and with raising the efficiency of the great masses of the people and it was a source of considerable satisfaction when eventually, as was too often the case, the necessity occurred for patients to be treated in our asylums to find so much devotion, tact, kindness, and sympathy. The Bishop further referred to the great progress and improvement made in the treatment of the insane within his own memory.—Dr. W. Harding (Northampton) also spoke and the treasurer, Mr. H. F. Hayes Newington, proposed a hearty vote of thanks to the President for his address and proposed that his paper should be handed over to a special committee of the Medico-Psychological Association now sitting to deal with nursing registration.—Mr. Bevan Lewis then read a paper entitled "Alcoholism, Crime, and Insanity," in which he referred to his early investigations in 1878 and 1880 upon thermogenesis as affected by certain potent alkaloids, as also by chloral, caffeine, and alcohol. Alcohol, he said, led to an initial stage of increased blood pressure with decreased heat formation, followed by a stage of decreased blood pressure together with increased thermogenesis, as well as inordinate heat discharge. Chloral acted similarly and in the second stage was accompanied by the enormous evolution of from 7 to 11 heat units per gramme of body-weight. The antagonism of caffeine in this respect was illustrated by the fact that heat formation was stimulated from the first but its operation favoured heat retention, not dissipation. The impairment of muscular sense under the agency of alcohol was then discussed and a notable similarity in this operation indicated in the three diseases, chronic alcoholism, general paralysis, and dementia precox. The seat of muscular sense discrimination was identified with the cortex of the motor area as mapped out on histological data by the author and by Dr. Alfred Campbell, together with the adjacent fringe of cortex called by him the "transition realm" and which corresponds to Dr. Campbell's intermediate pre-central and intermediate post-central type. This site is peculiarly liable to early implication in the three affections alluded to at a period when general sensibility and thermal and painful impressions are unimpaired. Attention was then made to the geographical incidence of alcoholism and it was shown by tabulated statistics that the admixture of a maritime with a mining and manufacturing class was fatal to the sobriety of the community; that, in fact, inland and agricultural communities were the least inebriate but had the highest ratio of pauperism and of insanity; that inland and maritime mining and manufacturing communities were the most inebriate but had the lowest ratio of pauperism and insanity; whilst maritime mining and manufacturing communities, above all others, were the most temperate and revealed the lowest ratios of pauperism and insanity. A dissociation between alcoholism and insanity was thus indicated, whilst the latter was allied with pauperism, want, anxiety, and other moral factors. He expressed his belief that alcoholism was not, in the true sense of the word, inheritable but indicated the neurotic features which favoured its operation and dwelt on its

PATHOLOGICAL SOCIETY OF LONDON.

The Bearing of Recent Research upon Some Problems of Urinary Excretion.

A MEETING of this society was held on March 6th, Dr. F. G. HOPKINS, Vice-President, being in the chair.

Dr. HOPKINS read a paper on the Bearing of Recent Research upon Some Problems of Urinary Excretion. He dealt with two main considerations: the progress in our knowledge as to the origin of well-known excretives and the possible practical importance of chemical anomalies in pathology. He first dwelt upon the clearness which had been added to our views concerning the source of certain urinary products, now that, owing to our increased knowledge of proteids, we could trace these substances directly to precursors in the proteid molecule. This was illustrated, *inter alia*, by the cases first of cystine, which was itself present in the proteid, then of homogentisinic acid (in alkaptonuria) which could be traced as arising by known steps from tyrosine and phenyl-alanine, and further of indoxyl which was derived from tryptophane. No longer were these looked upon as arising by complicated abnormal syntheses, nor—in the case of the first two—as indicating the intervention of extraneous agents such as bacteria. Homogentisinic acid and cystine were normal intermediate products of metabolism, excreted because of a "chemical malformation" in the subject who excreted them. The malformation was one of deficiency and in the case of alkaptonuria they had now very precise information that what was lacking was a specific oxidising mechanism which normally split the benzene ring of homogentisinic acid. Consideration of melanine pigments was naturally suggested by the subject of alkaptonuria and its occasional association with ochronosis. Dr. Hopkins showed that the increasing evidence for the direct origin of melanines from the aromatic groups in proteid had added interest to the study of pigmentation. Purin metabolism was next briefly dealt with, chiefly from the point of view of showing that, in the breakdown of tissue nucleins, guanine and adenine were primary products which had first to be converted into xanthine and hypoxanthine by means of special ferments before the oxidative mechanism of the body could deal with them. This was at any rate true in the case of adenine and the point was made that, as the base was decidedly toxic if the chemical mechanism which dealt with it were to fail, definite symptoms might be produced, although the product concerned was, in a sense, a physiological one. Turning to his second thesis, Dr. Hopkins endeavoured to show that the occurrence of chemical abnormalities might constitute a not altogether unimportant chapter in practical pathology. Although any individual type of variation from the normal was probably a recessive character and must remain rare, yet the multiplicity of chemical factors in the body was very great and the material basis for diverse variations was large. It did not follow—witness the case of adenine—that all arrested intermediate products must necessarily prove innocuous and, moreover, deficiencies in chemical organisation might affect construction as well as breakdown. Since, too, such substances as adrenalin were absolutely necessary for the maintenance of the body, and since they must arise by definite chemical stages from definite precursors, there was on this side of metabolism full room for variations in the direction of deficiency. Although chemical abnormalities were, in general, as in the case of alkaptonuria, congenital, yet it was interesting to find that symptoms, even in alkaptonuria, might be latent until late in life. It was not difficult to understand why chemical abnormalities were recognised with difficulty. It was illuminating to remember that failure on the part of an organ to develop any one of its normal chemical factors might be equivalent in some of its effects to degeneration of the organ itself. He desired to emphasise the point that the phenomena in the recognised cases of chemical deficiency made it no longer necessary to think of such deficiency in a vague vitalistic way; what was lacking might be some definite chemical mechanism on which, metaphorically, the finger might be placed. In his concluding remarks he pointed out that the ferments of the urine, which had been lately shown not to be autolytic enzymes, but to owe their origin to the digestive glands, had this much importance to pathologists, that they proved the

kidney permeable to a class of substances to which toxins and antitoxins stood near. A renal influence in removal of toxin on the one hand or of antitoxin on the other was not to be ignored.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Clinical Cases.—Appendicitis.

A MEETING of this society was held on March 1st, Mr. FRANK T. PAUL, the President, being in the chair.

DR. T. R. BRADSHAW showed, amongst several other cases of interest: (1) a case of Paralysis of both Sixth Nerves in a young woman from whose neck cancerous glands had been removed; (2) Congenital Heart Disease with cyanosis, drumstick fingers, and systolic murmur at the base; and (3) Disseminated Sclerosis in a lad aged 19 years, after pneumonia. The symptoms were ataxy of the legs and arms, brisk reflexes and scanning speech, but no nystagmus.

Dr. A. G. GULLAN showed a man, aged 27 years with Complete Transposition of the Viscera. The man enjoyed excellent health and had been through the South African War.

Dr. GULLAN also showed two cases of Exophthalmic Goitre which had improved under the treatment of rodagen in drachm doses.

Dr. NATHAN RAW showed cases of Mitral, Pulmonary, and Aortic Stenosis respectively; two cases of Myxœdema and one of Arsenical Neuritis.

The PRESIDENT exhibited a patient upon whom he had performed Orchidopexy for Cryptorchidism.

Dr. G. STOPFORD TAYLOR exhibited a case of Mycosis Fungoides in which all evidence of the disease, except some pigmentation, had disappeared after treatment by the x rays. Fifteen exposures of ten minutes' duration each equal to a Holznecht's unit were administered, two exposures being given each week. The diagnosis had been confirmed by a microscopic section of the growth.

Dr. F. H. BARENDT exhibited a man, aged 22 years, with Seborrhoea Corporis caused by wearing a vest continuously night and day for a fortnight in spite of free perspiration during work. The eruption consisted of discrete macules, salmon coloured, marginate and slightly scaly, scattered over, and limited to the anterior and posterior aspects of, the trunk.

Dr. LESLIE ROBERTS showed cases of Lupus, Keloid following Syphilis, and Follicular Epithelioma.

Dr. A. BERNARD showed a case of Digital Primary Syphilis with Secondary Manifestations.

Syphilis with Secondary Manifestations.
Dr. K. A. GROSSMANN showed a case of Albinismus confined to the Iris, the structures of which with the exception of the uveal layer were free from pigment. The pupils were both excentric, indicating congenital displacement of the lenses, which caused slight horizontal astigmatism. Horizontal nystagmus was present and in the left eye capsular cataract. The hair and fundus oculi were pigmented throughout.

Mr. R. J. HAMILTON showed: 1. A case of Ptosis and Paresis of the External Rectus in the Right Eye and Paresis of the Left Inferior Rectus. 2. Persistent Increased Tension in the Eye of a girl aged 18 years, after removal of traumatic cataract. Iridectomy had failed to give more than temporary relief.

temporary relief.

THE PRESIDENT read a paper on Appendicitis. He discussed the relative success of early and "interval" operations. Everyone agreed in operating at once in cases which suppurated or in which general peritonitis supervened, but apart from these complications "interval" operation, as recommended by Sir Frederick Treves, was the goal to aim at in order to reduce the mortality from

recommended by Sir Frederick Mott at. Statistics were wanting as to the mortality from appendicitis when the early operation was uniformly undertaken, but from what he had seen of it he was sure that the death-rate was much higher than when uncomplicated appendicitis was properly treated through the attack and appendectomy done on recovery. In any statistics it was necessary to consider the mortality as a whole. Since his previous paper, five years ago, he had operated on 252 cases, including 43 abscess and 17 peritonitis cases. The mortality was 6.3 per cent. During the last year there had been considerable improvement. For 72 cases, including 16 abscess and four peritonitis cases, the mortality was 2.7 per cent. For "interval" operation there should be practically no loss of life and very little in abscess cases if taken early and the appendix not removed.

of the worst of omens; (6) of throat complications, swelling and ulceration in the upper larynx were serious and the physical signs in the lungs were often deceptive in these cases; and (7) the effect of treatment could be gauged only of the condition of the patient several months after he had left the sanatorium and had undertaken duties which he intended to perform for the rest of his life.—Dr. C. Elliott, Dr. R. Shingleton Smith, Mr. W. Roger Williams, Dr. R. C. Leonard, Dr. Edgeworth, Dr. J. Michell Clarke, and Dr. J. R. Charles joined in the discussion which followed this paper, many of them thinking that Dr. Lucas took too gloomy a view of these cases and especially of the sanatorium treatment.—Dr. Coombs read a paper on Colitis Polyposa, based upon an account of a specimen in the Bristol General Hospital Museum, which consisted of the colon of a young woman who died from exhaustion after six months' dysenteric diarrhoea. There was general polyposis of the mucosa of the colon without ulceration. Microscopically this proved to be due to inflammatory hyperplasia of the submucosa. The case closely resembled one described by Dr. F. M. Pope.—Dr. Clarke, Mr. Williams, and Dr. Harrison discussed the case.

THERAPEUTICAL SOCIETY.—A meeting of this society was held on Feb. 20th, Sir Lauder Brunton, the President, being in the chair.—Mr. Thomas Maben, F.C.S., read a paper on Anti-diphtheria Serum and its Preparation, illustrated by limelight views. He showed that the toxin of diphtheria was prepared by cultivating the bacillus in alkaline beef bouillon for about seven days and then filtering it and storing it in the cold. It was subsequently tested as to its potency on guinea-pigs and afterwards injected into horses which were perfectly healthy, at first in minute doses but gradually increased every week till 1000 cubic centimetres were injected at once, a quantity sufficient to kill 100 unprotected horses. By this procedure a very powerful antitoxin was developed in the horse's blood, which antagonised the diphtheria poison. After nine months of this treatment a gallon of blood was taken from the horse's jugular vein every week in glass cylinders and kept cold for four days till the serum separated. This serum was drawn off, filtered, and after three weeks, if the horse remained quite healthy, it was injected for the cure of diphtheria. If properly preserved it might retain its power for two or three years and it was important to inject it without delay in diphtheria, as only 1 in 238 patients died if injected on the first day, but 1 in 9 if not treated till the fourth day. There was no danger from large doses; in severe cases from 12,000 to 24,000 units should be used. In America and Germany the Government guaranteed the efficacy of the serum but in England this was done by private experts.—A paper on Clouds and Climate from Dr. Stuart A. Tiedey of Montreux, Switzerland, illustrated by limelight views, was communicated, showing that in Switzerland a cloudless day was rarely met with, as after sunrise evaporation from the snowfields and glaciers caused clouds to form over them by the condensation of the vapour in cold air; these gradually extended over the neighbouring valleys and might form rain. After sunset evaporation ceased and the clouds disappeared. The clouds increased more rapidly when the air was moist and warm. In winter they were chiefly found at the lower elevations while the mountain tops were cloudless, but in summer the peaks were covered with clouds while the valleys were free; hence it was advisable that in autumn visitors should reside at first at a lower level having easy communication with higher stations, and Montreux on the Lake of Geneva was very favourably situated for this, as in autumn it was free from clouds which remained on the mountain peaks, and when clouds formed in winter there was easy access by rail to many higher stations, as Sierré, 1765 feet; Seysin, 4500 feet; and Les Avants, 3200 feet, all of which had good hotels and facilities for winter sports. Courmayeur also, 3500 feet, was a very favourite winter station but could only be reached by carriages.

CORK MEDICAL AND SURGICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Dr. R. P. Crosbie, the President, being in the chair.—Dr. O'Sullivan showed a case of Concurrent Acute Rheumatism and Acute Chorea complicated by Cerebro-spinal Meningitis. In a girl, aged ten years, who was admitted to the South Infirmary in a highly feverish condition with well-marked choreic movements. These were so severe as to render

alimentation by the mouth impossible, so rectal feeding was begun and continued for the lengthened period of 25 days. To make matters worse two big, unhealthy-looking bed-sores were present. Auscultation revealed the presence of murmurs at all the orifices and, in fact, a condition of pancarditis prevailed. About a week after admission retraction of the head was noticed, together with convergent strabismus of the right eye. Albumin appeared in the urine and the joints were so relaxed that dislocation of the sternal end of the right clavicle occurred. The treatment consisted in counter-irritation by fly blisters over the second, third, fourth, and fifth intercostal spaces, alkalies and aspirin to combat the rheumatic poison, and bromide of sodium to relieve the meningeal hyperemia, whilst strychnine was given hypodermically for the grave asthenia. The patient made a good recovery. Dr. O'Sullivan remarked on the rare occurrence of such a case and invited discussion as to the etiological factor in the complicating meningitis.—Dr. Moore thought that the meningitis was due to the organism of rheumatism.—Dr. A. A. Hudson read some notes on "Fango di Battaglia," giving an interesting account of the origin, the chemical composition, the technique of the application, and the indications for the use of this kind of mud bath. He said that not only was it invaluable in arthritic cases, but it was beneficial in anaemia, chlorosis, scrofula, eczema, psoriasis, and so on. He read clinical notes of cases, Continental and English, and some that came under his own care so treated with excellent results.—Mr. P. G. Lee read a paper on the Preparation of Antitoxins, illustrated by lantern slides showing the various steps and apparatus used.

HUNTERIAN SOCIETY.—A meeting of this society was held on Feb. 28th, Dr. F. J. Smith, the President, being in the chair.—Dr. W. H. Kelson read a paper on Some Throat Affections, giving a short account of mycosis of the tonsils, Vincent's angina, erysipelas inflammation of the fauces, chronic pharyngitis, and a condition which resembles secondary syphilitic affection of the throat but does not yield to anti-syphilitic treatment. He discussed the relative importance of local and general treatment in many affections of the throat.—The President, Dr. Fortescue Fox, Mr. F. R. Humphreys, Mr. W. A. Milligan, Dr. Purves Stewart, and Dr. W. J. Galt discussed the paper and Dr. Kelson replied.—Dr. Milligan read a paper on the Diagnosis of Early Extra-uterine Pregnancy based on his experience of 50 cases in the last three years. He considered that a history of previous sterility was of no value. He laid stress on the importance of pain as a symptom, especially pain on micturition. In cases where the patient said that she had not missed a period careful questioning would often elicit the fact that her last menstrual period was abnormal in some way. Pulsation in one of the lateral fornices was an important sign. As regards differential diagnosis, the most important conditions were intra-uterine pregnancy, retroversion of the pregnant uterus, inflamed appendages, and small ovarian tumours with twisted pedicles.—The President, Dr. H. Russell Andrews, and Mr. Hugh Lett discussed the paper, and Dr. Milligan replied.—Dr. Stewart read a paper entitled, "What is the Earliest Stage at which we can diagnose Tabes Dorsalis?" He considered that a diagnosis should be made before ataxia appeared, from the presence of some of the following symptoms: lightning pains, girdle sensation, woolly feeling in the soles of the feet, difficulty in micturition, transient ocular paralysis, gastric crises, loss of "vibration sense," areas of cutaneous analgesia and hyperaesthesia, analgesia of the glans penis, and Biernacki's symptom. The ankle-jerks were lost long before the knee-jerks. The most certain early diagnostic sign was to be found by examination of the cerebro-spinal fluid. Normally this fluid contained very few cellular elements, while in tabes dorsalis and general paralysis of the insane it contained an enormous excess of lymphocytes.—The President, Dr. Langdon Brown, and Dr. Kelson discussed the paper, and Dr. Stewart replied.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held on March 2nd.—Mr. G. Carter Braine read a paper on Experiences of Anæsthetics in 200 O.-secutive Cases of Prostatectomy. On account of their great age and physical infirmities these were the worst subjects for anæsthetics. 66·8 years was the average age, 11 being octogenarians. He used ether 18 times, chloroform 50 times, chloroform with one-twelfth ether 84 times, and chloroform

prejudicial action on the germ plasm and ovum as evolving convulsive forms of mental diseases—epilepsy, chorea, hysteria, &c.—and also the degenerate forms of idiocy, imbecility, and the criminal type, as emphasised in the offspring of an alcoholic parentage. He expressed his adherence to the doctrine of Weissmann that acquired characters are not transmitted.—Dr. O. A. Mercier, Mr. Newington, and Dr. Robert Jones also spoke.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 2nd, Mr. W. Campbell M'Donnell, the President, being in the chair.—Mr. Raymond Johnson read a paper on Some Surgical Aspects of Glycosuria. The subject was considered under three headings: first, the occurrence of temporary glycosuria after injuries and in the course of certain surgical affections, especially of an acute inflammatory nature; secondly, the propriety of the performance of surgical operations upon the subjects of glycosuria; and thirdly, the surgical complications of diabetes. In connexion with the various conditions in which a temporary glycosuria had occasionally been met with it was insisted that confirmatory evidence, especially the fermentation test, must always be obtained before it was assumed that a reducing substance present in the urine was really sugar. A case was recorded in which, after a few days' illness, a 18¹/₂ lb. man became rapidly comatose. Sugar in considerable quantity was found in the urine and the case was at first regarded as one of diabetic coma. Further examination, however, threw doubt on the diagnosis and elicited the existence of chronic otorrhœa. The glycosuria was merely a symptom of diffuse meningitis from which the patient died on the day after the onset of the coma. Acute diabetes must be regarded as an absolute contra-indication to the performance of any operation unless of urgent necessity. In all diabetics an operation involved a risk of the supervention of coma, and unless the wound could be kept absolutely aseptic severe forms of diffuse inflammation were likely to occur. Cases were quoted illustrating the behaviour of aseptic and septic wounds in diabetic subjects. The possibility of the occurrence of these complications had to be considered seriously even when the percentage of sugar was low and the patient's general condition favourable. In speaking of the various surgical complications of diabetes it was pointed out that for the most part they did not present distinctive features; thus the carbuncle of a diabetic presented usually nothing characteristic, and as the patient in such cases often showed no appearance of serious ill health the importance of a systematic examination of the urine could not be exaggerated. Diabetic gangrene also was not to be regarded as a specific form; it resulted from causes capable of resulting in gangrene apart from the presence of glycosuria; the diabetes favoured but did not cause the occurrence of gangrene. It had long been recognised that many cases of diabetic gangrene, especially of the lower extremity, were due to the chronic arterial disease to which diabetic subjects were liable and experience had shown that a good result might follow high amputation in such circumstances. Gangrene of inflammatory origin presented itself in the most different degrees of severity. A most severe form might follow diffuse cellulitis, but in its least severe form the gangrene might be limited to the separation of small cutaneous sloughs, leaving a granulating surface which might heal favourably under a suitable diet and the administration of opium or codeine. Finally, reference was made to the perforating ulcer of diabetes and to some other affections of the skin occasionally associated with the disease.—Dr. H. P. Miller showed a man, aged 39 years, with Ascidæ due to Multiple Malignant Abdominal Tumours. The condition had existed four years and he had been frequently tapped.—The President showed a woman, aged 53 years, with Loss of all the Toes of the Right Foot. During the past seven years the toes had gradually sloughed off and now one of the toes of the left foot had commenced to slough. The condition was regarded as a rare form of Raynaud's disease.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 16th, Mr. I. Ward being in the chair.—The following cases, pathological specimens, &c., were shown:—(a) Mr. H. Secker Walker: (a) A case of Acute Syphilitic Iritis; and (b) a case of High Myopia treated by removal of the Crystalline Lens of each Eye.—Mr. Walter Thompson: Biliary Calculus removed from the Small Intestine for Obstruction.—Mr. A. L. Whitehead. Deformity of Nose treated by Paraffin

Injection.—Dr. A. Bronner: A case in which Slight Mastoid Disease gave rise to all the symptoms of Severe Septic Basal Meningitis.—Mr. G. Constable Hayes: Dermoid of the Eye. Dr. E. F. Trevelyan: (a) A case probably of Erb's Juvenile Dystrophy; and (b) a case of Infantile Paralysis in which the atrophy has persisted chiefly in the small muscles of the hand. Cases and specimens were also shown by Mr. A. E. Pearson, Dr. T. Churton, Mr. W. H. Brown, Dr. T. W. Griffith, and Dr. J. Allan.—Dr. H. J. Campbell opened a discussion upon the Clinical Aspects of the Rheumatic Infection. After a brief historical survey of the subject he gave a short account of the arguments—bacteriological, epidemiological, and clinical—in favour of the view that acute rheumatism is a specific infective disease. He then considered the clinical aspects of a typical case, with a more detailed consideration of the heart affections, including malignant endocarditis, and the nervous manifestations, including chorea and rheumatic meningitis. He also pointed out the peculiarities of the affection in childhood and considered some of the more unusual features of the disease that occurred from time to time. The salicylate treatment was also briefly considered.—Dr. Churton, Dr. W. Edgecombe, Dr. W. R. Bates, and Dr. A. G. Barrs discussed the subject and the adjourned discussion was reopened by Dr. A. Mantle of Halifax, who dealt specially with that form of rheumatism associated with scarlet fever, the manifestations of which were identical with those of acute rheumatism in affecting joints and heart, chorea not infrequently following. He also contended that the relationship of acute rheumatism to so-called rheumatoid arthritis was by means so close as had been thought. Rheumatoid arthritis was not an entity and might occur from many kinds of infection. He was of opinion that there existed some diathesis favourable to the development of arthritis difficult to explain until chemical pathology assisted them more as to its nature.—Dr. Trevelyan regarded the existence of a rheumatic diathesis as quite unproved.—Dr. Griffith drew attention to the frequency with which he had observed cases of typical rheumatoid arthritis associated with heart lesions.—Dr. Maxwell Telling supported this observation and drew attention to the rarity of rheumatic nodules in childhood in that part of the country.—Mr. A. W. Whitehead and Mr. Michael A. Teale doubted the existence of a true rheumatic iritis. In their ophthalmic practice they had not met with a single undoubted case.—Dr. G. E. St. Clair Stockwell pleaded for the treatment of chorea with large doses of salicylates, claiming to have seen good results therefrom. He also supported Dr. Telling's statement as to the rarity in Yorkshire of rheumatic nodules.—Mr. E. Solly, Dr. J. W. Draper, Dr. Bronner, Dr. J. Tregelles Fox, and Mr. Ward also joined in the discussion.—Dr. Campbell, in a brief reply, pointed out that though a rare complication there were several undoubted cases of rheumatic iritis on record and that the experiments of Dr. F. J. Poynton and Dr. A. Paine supported this.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Mr. John Dacre, the President, being in the chair.—Dr. E. W. Hey Groves showed the following card specimens: Tumour of the Adrenal Gland, Parosteal Sarcoma of the Finger, Primary Sarcoma of the Thyroid, Sarcoma of Testis, and a Duodenal Ulcer which caused fatal hæmorrhage.—Dr. J. O. Symes read a paper on the Arthritis of Erythema Nodosum. He described three types of arthritis—viz., the gouty, the rheumatoid, and the painful joints apart from objective signs. He stated the arguments for and against the theory that erythema nodosum is a rheumatic manifestation. Whilst the age curves of the two diseases coincided closely the seasonal and sex curves showed very wide divergency. On the whole he inclined to the view that the disease was an acute infective fever.—Dr. A. J. Harrison, Dr. W. K. Wills, Dr. F. H. Edgeworth, and Dr. Carey F. Coombs discussed the paper.—Dr. J. J. S. Lucas read a paper on Some Points in Prognosis in Pulmonary Tuberculosis. He spoke from his experience at the North London Consumptive Hospital and in his private practice and made the following deductions: (1) a phthisical patient should never consider himself sound, at least not for some years after loss of all symptoms; (2) the appearance of the patient, the shape of his chest, and his family history were of the greatest importance in prognosis; (3) of early hæmoptoe hæmoptysis by itself was rather a good sign, whilst dyspnoea was a bad one; (4) isolated observations of temperature as a rule did not help the prognosis, but persistent evening high temperature for a month was bad; (5) a rapid pulse was one

ulcerative endocarditis not much reliance is placed in the antistreptococcic serum; the author considers that it may be of benefit in a few cases provided that the streptococcus is the cause of the disease and provided that the variety of the streptococcus used in the preparation of the serum is the same as that present in the heart.

It is scarcely necessary to follow in any detail the rest of this text-book. An anatomical arrangement is generally adopted, though after the diseases of nutrition space is found for a section on intoxications and for another upon diseases due to animal parasites. Under the former, in addition to alcoholism, morphinism, and lead and arsenical poisoning, the author has included food poisoning of sundry unusual varieties, together with pellagra, lathyrism, atropicism, and lacquer poisoning, conditions which are certainly not often met with in this country. The diseases of the nervous system are reserved for the concluding section, those with definite organic lesions preceding those of functional origin. Amongst the latter adequate space is devoted to the consideration of many interesting conditions, such as caisson disease, latah, amok, astasia abasia, angioneurotic oedema, and erythromelalgia.

Viewed as a whole this volume merits high commendation and will probably be welcomed by many students in this country as well as in the home of its birth. The transatlantic origin is necessarily well marked both in the citation of authorities and in the spelling; rarely is it reflected in the treatment, though in some few instances reference is made to medicinal plants which are unknown or unobtainable in this country. The book is perhaps a little overburdened with statistics from various sources but an intelligent student will readily appreciate these at their proper value and will not be tempted to commit them to memory. The style is thoroughly clear and direct; there is no ambiguity of statement to puzzle the beginner and the illustrations and plates are admirably chosen to facilitate comprehension.

Traité de Gynécologie Clinique et Opératoire. Par S. Pozzi, Professeur de Gynécologie à la Faculté de Médecine de Paris. Quatrième édition revue et augmentée avec la collaboration de F. JAYLE. Tome premier. Paris: Masson et Cie. 1905. Pp. 765. Price 20 francs.

THE second and third editions of this work followed so closely upon the first that no very marked modifications of the general plan of the book were made. In this the fourth edition the sections relating to treatment have been considerably altered and the indications for, and the choice of, one or another operation have been more clearly defined and laid down. As the author points out in the preface the work has thereby acquired a more personal character. Numerous changes also have been made in the portions of the chapters dealing with pathological anatomy and these sections in large measure have been rewritten. In view of the very large increase in the amount of the literature dealing with all the more important departments of gynaecology Professor Pozzi has been compelled to refrain from increasing the amount of space devoted to the bibliography. He has endeavoured to mention all the more important works or any of the more recent which embody some really new addition to our knowledge. In the preparation of this edition he has had the valuable assistance of his old pupil and now colleague, Dr. Jayle. The book, when the first edition appeared, received our hearty commendation and we welcome a new and revised edition. Quite apart from its own merits, which are considerable, it affords us a clear and an important review of the teaching of the modern French school of gynaecologists.

To the first chapter on Asepsis and Antisepsis in Gynaecology a good deal of new material has been added. An

account is given of the installation and fittings of an operation theatre and the question of sterilisers is fully discussed. In the section dealing with the cleansing of the hands great stress rightly is laid upon the importance of not infecting the hands, the use of alcohol is advocated, and the systematic employment of gloves. In the section on Anaesthesia a clear description is given of the operation of lumbar puncture and rachico-cocainisation. Professor Pozzi, however, does not believe that it will retain its place in practice and in this we agree with him. In the chapter dealing with the various methods of examining the pelvic organs the different forms of exploration of the bladder and the ureters, and the collection of samples of urine from either kidney are fully explained. In his description of the natural life-history of fibroid tumours of the uterus the author expresses his belief that they tend in ordinary circumstances to diminish at the menopause, although he admits that there are numerous exceptions to this rule. A most interesting observation is recorded on p. 347, where there is a figure of a fibroid which has been invaded by a carcinoma secondary to a similar growth in the breast. The discussion on the various operations which are available in the treatment of fibroid tumours is illustrated by a series of very instructive tables showing the mortality results of the different procedures. The author declares his preference for sub total hysterectomy over total abdominal hysterectomy, because he thinks the former more simple, more rapid, and less grave an operation than the latter. He is not inclined to attach much weight to the risk of the occurrence of carcinoma in the stump of the cervix. A new chapter is that dealing with adenomyomata of the uterus. The view is expressed that the more superficial tumours of this type have a congenital origin from the Wolffian duct and that the tumours arising close to the cavity of the uterus owe their glandular elements to incursions of the uterine mucous membrane.

A very full account is given of the advantages of the vaginal and abdominal routes in dealing with cancer of the uterus or of the cervix by operation. The preference is given to abdominal hysterectomy, except for the very earliest cases where the growth is absolutely limited to a portion of the cervix. Professor Pozzi does not practise the systematic ablation of the pelvic glands. As he points out, it adds very seriously to the danger of the operation. He contents himself with as wide a removal as possible of the cellular tissue round the uterus. In most of the cases in which he has observed a recurrence it has occurred close to the vaginal scar and not in the glands.

A new section has been added on endothelioma of the uterus and it is illustrated by two figures from Gebhard. The account of hydatidiform mole and chorion epithelioma is a full and clear one. The views put forward by Marchand are in large part followed and adopted and an interesting account is given of the origin of the syncytium and its relation to Langhans's layer. The remainder of the volume is devoted to the subject of displacements of the uterus and their appropriate treatment. The various operative procedures are fully described and their merits are considered. The book well maintains the favourable impression created by previous editions and we hope that the second volume will follow the first at no distant date.

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THIS volume consists of a series of character studies of more or less eminent men reprinted from the pages of the *Pall Mall Magazine* and the *London Magazine*. In these days when the journalistic interview has become debased into an impertinent and undesired intrusion or in some cases

with one-tenth alcohol 48 times. Of these chloroform with one-twelfth ether had proved the best anæsthetic. The marked effects of prostatectomy upon the circulation, respiration, and muscular system were fully illustrated by these cases. Abdominal rigidity, even under deep anæsthesia, was occasionally very troublesome, pushing the anæsthetic only causing respiration to cease without the recti relaxing. This liability to rigidity was dependent on the nature of the operation, the part being so freely supplied with spinal and sympathetic nerves.—The President, Mr. Freyer, Mr. Mortimer, Dr. R. J. Probyn-Williams, Mr. MacCardie, Mr. Burns, Mr. Thomson Walker, and Mr. Harvey Hilliard all agreed on the troublesome rigidity and the preferability of chloroform over ether in these cases.

ROYAL MEDICAL SOCIETY OF EDINBURGH—A meeting of this society was held on March 2nd, Dr. R. A. Chambers being in the chair.—Mr. T. Graham Brown read a dissertation on Organic Evolution. After noticing the views of Empedocles, as set forth by Lucretius, and Aristotle, Mr. Brown directed his attention to the theory evolved simultaneously by Darwin and Russel Wallace. Having briefly sketched their views Mr. Brown considered the position of the Neo-Lamarckian and Bathmic schools in regard to evolution, emphasising the essential points of difference between them and criticising their views generally.—Dr. J. G. Craig exhibited a case of Hæmorrhagic Cyst of the Pancreas following an injury.—Dr. N. S. Carmichael presented a case of Diabetes in which death had occurred owing to an intercurrent attack of acute croupous pneumonia and showed a chart demonstrating the effect which the rise of temperature had had on the excretion of urine and on the amount of sugar and urea contained in it.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Feb. 21st, Dr. S. Buckley, the President, being in the chair.—Mr. Platt gave an account of a case of Primary Epithelioma of the Urethra which had occurred in a man, aged 59 years. The epithelioma had supervened upon a traumatic stricture dating from boyhood. Complete amputation of the penis had been performed about two months previously, since which time the patient had remained in good health. The diagnosis had been confirmed by microscopic examination. Reference was made to the rarity of this condition, to the symptoms to which it gave rise, and to the difficulties of diagnosing it sufficiently early to permit of the performance of a radical operation.—The President gave an address on Medical Progress and Training in Relation to Medical Practice.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 8th, Mr. W. H. Date being in the chair.—Dr. J. Mortimer reported a sequel to a case of Hyperpyrexia. The original case was that of a woman whose temperature reached 106° F. seven times in seven weeks and once was as high as 110°. There was a faint Widal reaction. Complete recovery took place. Treatment consisted mainly of ice packs with pilocarpine injections and stimulants. 12 months later her husband was taken ill, rapidly developed hyperpyrexia with a temperature of 111°, and died in an unconscious state with tonic spasms and opisthotonos in spite of similar treatment. This man slept on the feather bed on which his wife had slept during her illness. It had not been disinfected.—Dr. J. A. W. Pereira read a paper on Arterio-sclerosis.

Reviews and Notices of Books.

A Text-book of the Practice of Medicine, for Students and Practitioners. By HOBART AMORY HARE, M.D., B.Sc. Illustrated with 129 engravings and 10 plates in colours and monochrome. London: Henry Kimpton. 1905. Pp. 1119. Price 21s. net.

THE author of this volume is already well known in this country through his "Text-book of Practical Therapeutics" and his "Text-book of Practical Diagnosis." As professor of therapeutics in the Jefferson Medical College of Philadelphia and physician to the Jefferson Medical College Hospital he has had abundant opportunities of collecting material for a text-book on the practice of medicine and of becoming well acquainted with the needs of students. In

his preface he states that he has attempted to present the facts which the practitioner needs and which the student must thoroughly grasp if he is to be successful in gaining his degree and in practising his art. Mindful of the present interest in tropical diseases, both in this country and in the United States, he has included in his volume several chapters written by Dr. Charles F. Kieffer who has seen active service in the Philippines and has delivered lectures on tropical diseases at the Jefferson Medical College.

In considering a new text-book on medicine one of the first objects of the reviewer is to ascertain from the arrangement the author's standpoint towards infectious diseases. In the present volume these are first considered; typhoid fever is dealt with in great detail and with numerous illustrative charts. The account of the complications and sequelæ of typhoid fever is remarkably full but it may be noted that the numbers relating to the frequency of albuminuria and of acute nephritis appear to be higher than those met with in this country. Space is found for a full description of the Widal test which should enable any student to follow the directions with a reasonable prospect of success. Two pages are devoted to paratyphoid fever and in these the author has summarised the present state of knowledge of this condition, which differs from typhoid fever in the Widal reaction being usually negative and in the more favourable character of the prognosis. It is satisfactory to find that the author groups amongst the infectious diseases the following: cerebro-spinal fever, croupous pneumonia, gonorrhœal infection, acute rheumatic fever, tuberculosis, and a large number of the tropical diseases. The account of croupous pneumonia is in many respects noteworthy—e.g., the recognition of exposure to cold as a predisposing cause which "decreases the general systemic, or local, powers of resistance to infection," and the appreciation of the influence of toxæmia in the causation of dyspnoea; but, on the other hand, some of the commoner symptoms are not mentioned and accordingly diagnosis appears to be based upon leucocytosis almost more than upon the physical signs.

The sections relating to tropical diseases are perhaps those in which this book shows the greatest differences from other text-books and they indicate the long though unequal strides that have been made of late years. The etiology now rests upon much more certain foundations but our knowledge of treatment, to judge from the account here given, has not made corresponding advances. It is impossible to read what is here said upon this subject without a restless feeling of discontent and a conviction that in future editions it may be possible to speak with more precision and to advocate methods of treatment less suggestive of mediæval times. With this statement of opinion we feel sure that the author, from his well-known therapeutic tendencies, will not quarrel. Increased knowledge of the causation must inevitably be followed speedily by improved methods of treatment.

The diseases of the respiratory system are satisfactorily dealt with in the next section, more space being devoted to pathology, morbid anatomy, and treatment than to symptoms and physical signs. These two subjects are, indeed, sometimes included under one common heading; thus we read that "the symptoms of emphysema may be best divided into the objective or those that can be seen by the physician, and the subjective or those described by the patient." For pleurisy with effusion Dr. Hare recommends little beyond tapping and although he gives detailed directions about the method of tapping he scarcely indicates sufficiently the circumstances calling for this measure.

The diseases of the circulatory system afford few opportunities for originality but the account here given is marked by the same lucidity which has characterised the earlier sections; it may be worth noting that in the treatment of

ulcerative endocarditis not much reliance is placed in the antistreptococcal serum; the author considers that it may be of benefit in a few cases provided that the streptococcus is the cause of the disease and provided that the variety of the streptococcus used in the preparation of the serum is the same as that present in the heart.

It is scarcely necessary to follow in any detail the rest of this text-book. An anatomical arrangement is generally adopted, though after the diseases of nutrition space is found for a section on intoxications and for another upon diseases due to animal parasites. Under the former, in addition to alcoholism, morphinism, and lead and arsenical poisoning, the author has included food poisoning of sundry unusual varieties, together with pellagra, lathyrism, atropicism, and lacquer poisoning, conditions which are certainly not often met with in this country. The diseases of the nervous system are reserved for the concluding section, those with definite organic lesions preceding those of functional origin. Amongst the latter adequate space is devoted to the consideration of many interesting conditions, such as caisson disease, latah, amok, astasia abasia, angioneurotic oedema, and erythromelalgia.

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THIS volume consists of a series of character studies of more or less eminent men reprinted from the pages of the *Pall Mall Magazine* and the *London Magazine*. In these days when the journalistic interview has become debased into an impertinent and undesired intrusion or in some cases

a self-sought advertisement it is something of a relief to find a serious attempt to present the motives and aims of a few strenuous workers in widely different fields in readable form without any unnecessary personal details.

Mr. Begbie tells us in his preface that his purpose in publishing these studies is twofold: first, to bring into one compass and to present in conversational form the thoughts of leading men working at different phases of modern inquiry, for he finds that there is, especially among scientific men, great insularity of thought and too often a lack of knowledge of the advances made in branches of scientific inquiry other than their own. He therefore hopes that it may be "possible for the reader to make himself at least elementarily acquainted with some of the various activities of modern investigation." The second object is to try to elevate the interview from "the boudoir atmosphere of vulgarity and commonplace" into which it has sunk in this country. The subjects of Mr. Begbie's 20 studies range from His Majesty the King to "the modern surgeon" and comprise such widely diverse personalities as Lord Roberts, Mr. John Morley, Admiral Sir John Fisher, the Bishop of London, Mr. Joseph Chamberlain, the Rev. B. J. Campbell, Mr. H. Beerholm Tree, and Sir Oliver Lodge. Mr. Begbie is thoroughly in earnest and shows a profound admiration and warm personal regard for many of his subjects. He writes well, in good scholarly English, with frequent allusions to, and quotations from, philosophical, literary, and scientific classics. The keynote is struck in the chapter devoted to the Bishop of London, one of the best articles in the series, in which the motive of the Bishop's life is described as "the gospel of 'worth while.'" Professor W. Osler, in his charming book "*Æquanimity*," describes the master word in medicine as work, and in like manner these character studies show that the secret of the success of the men whom he discusses is their persistent and untiring striving each in his own special field.

Mr. Begbie's interest in psychical problems and research is made very obvious throughout, but especially in the articles devoted to Sir Oliver Lodge, Sir William Crookes, Dr. Alfred Russel Wallace, Mr. Frank Podmore, and Dr. J. Milne Bramwell. He frequently refers to Frederick Myers's theory of a supraliminal and a subliminal consciousness and makes many references to spiritualistic and occult phenomena, such as hypnotism, telepathy, and thought transference, but always temperately and in critical fashion.

The concluding article is entitled "*The Modern Surgeon*" and to it there is appended a footnote in the following terms: "Medical etiquette forbids the publication of the name of the eminent surgeon to an intimate knowledge of whom I am indebted for any interest which the reader may find in this attempt to suggest the wonderful romance of modern surgery." Mr. Begbie regrets that the name of the surgeon does not stand at the head of the article but we venture to think that the article gains in value from the anonymity of the subject of it, as it may serve in some respects as a study of a type rather than of an individual. Incidentally Mr. Begbie refers to the striking advances in surgery rendered possible by the discoveries of Lister and Simpson and sketches briefly the career of a medical student. He points out the necessity in the surgeon of rapidity in forming judgments and of adaptability to conditions, perhaps unexpected, occurring during an operation. He sums up the characteristics as "a steady nerve, a sure hand, a quickness of observation, an adaptability of mind, and a swiftness of decision"—a description with which there is no fault to find.

Mr. Begbie's book we have read with pleasure and can commend it to our readers as affording much valuable and interesting information of a stimulating and thoughtful character.

Chapters in Pathology. By W. S. GREENFIELD, M.D. Lond., F.R.C.P. Lond. and Edin., Professor of Pathology in the University of Edinburgh; and GEORGE LYON, M.D. Edin., M.R.C.P. Edin., Second Assistant in the Department of Pathology in the University of Edinburgh and Assistant Pathologist to the Edinburgh Royal Infirmary. Edinburgh: William Green and Sons. 1905. Pp. 113. Price 5s.

ON the title-page of this volume it is explained that the work is based on lectures which were delivered by Professor Greenfield upon some points in the pathology of elementary nutritive and circulatory derangements. We agree with him that there are some subjects in connexion with general pathology with regard to which there has been constant difficulty. As Professor Greenfield remarks in his preface, this difficulty arises from the fact that the teaching in accessible text-books has sometimes been entirely at variance with the demonstrable facts and with the everyday experience of the laboratory and the post-mortem rooms, as well as with clinical observation. To a large extent the gradual advances of pathological science have come to be recognised and taught, but there are some common and elementary, yet fundamental, points upon which many otherwise admirable text books are still far behind. It is especially to these points that attention is directed in this small work.

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as inflammation. The chapter dealing with the nature of this process is one of the best in the book and the matter is treated in a manner which merits great praise. The student is made to understand the enormous value to pathology of the specialised research which has followed the effort to establish one or other view of the essential nature of inflammation. He is taught that if the processes connected with it are regarded as a whole, in all of them will be found a series of reactions combined for the common object of removing or antagonising the irritant and of preventing and repairing damage. In some cases one process is most active, in others another. It is further pointed out that from the moment of injury to the complete restoration to such health as is possible a succession and co-operation of these reactions are found all united to a common end. After this introduction the various phenomena associated with inflammation are described in a more graphic and comprehensive manner than we remember to have seen in any other text book on the subject.

We were much charmed by a perusal of this small work and could have wished that it had been longer. We can cordially recommend it as an excellent introduction to the study of pathology.

LIBRARY TABLE.

Traitement du Cancer Uterin Inoperable. Par le Dr. J. RICHAMIER. Paris: Georges Steinheil. 1905. Pp. 214. Price 3 50 francs.—This work is of special interest when we recall the fact that the author is the grandson of J. C. A. Récamier, the distinguished French surgeon who published numerous works on gynaecology and amongst others an important one entitled "*Recherches sur le Traitement du Cancer*." The treatment of cases of inoperable cancer is a subject of much importance, especially to the unhappy victims of the disease. At the present day, when our minds are much occupied with methods of operation for those cases which are still within the reach of possible relief by the knife of the surgeon we are liable to forget how much the sufferings of those who unhappily have sought our advice too late to enable us to hold out any hope of radical relief by operation can be assuaged by appropriate treatment carried out with thoroughness and care. The author paints a gloomy picture of the results of surgical interference and considers that the extensive abdominal operations recommended by many German surgeons are of little value and not likely to survive. He thinks that no cases of cancer of the uterus in which the growth has spread beyond the uterus should be subjected to radical operations as the chance of ultimate cure is so small. With such views as to the possibility of curing these cases by operation the author naturally lays considerable stress upon the various methods of palliative treatment. All the different methods are fully considered in this book and it contains a large amount of information which will prove very useful to all those who have such cases under their care.

A Manual of Chemistry: Inorganic and Organic. By ARTHUR P. LUFF, M.D., B.Sc. Lond., F.R.C.P. Lond., F.I.C.; and FREDERIC JAMES M. PAGE, B.Sc. Lond., F.I.C. Third edition, revised throughout. London: Cassell and Co., Limited. 1935. Pp. 555. Price 7s. 6d.—We have previously acknowledged the usefulness of this manual to students of medicine on the occasions of reviewing the first and second editions. In the third edition certain alterations have been made consistently with recent advances and the modern requirements of the student. Short descriptions have been added of the methods of determining boiling point and melting point and also a section on the relation of structure to optical behaviour. Certain new drugs have also received a place and the practical portion has been extended so as to include a brief account of volumetric analysis and a scheme

for the analysis of a mixture containing two metals and one acid. The book thus covers the ground of the chemistry examination, both theoretical and practical, of the English Conjoint Board. So far it is well calculated to give the student an excellent introduction to the principles and practice of chemical science but, of course, a more advanced work will be required later in the curriculum when the application of these principles to medical subjects must be studied in greater detail.

The Nervous Affections of the Heart. By GEORGE ALEXANDER GIBSON, M.D., D.Sc. Edin., LL.D. St. And., F.R.S. Edin., F.R.C.P. Edin., Physician to the Royal Infirmary, Edinburgh; Lecturer on Medicine and Clinical Medicine, Edinburgh. Second edition. London and Edinburgh: Young J. Pentland. 1905. Pp. 106.—This work is a publication of the Morison lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903. In THE LANCET of April 22nd, 1905 (p. 1072) we reviewed the first edition, and that a second edition should have been so speedily called for is proof that Dr. Gibson's exposition of an interesting but difficult subject has been received with the encouragement which it deserved. The demand for another edition has afforded Dr. Gibson an opportunity for thorough revision of the text but the present issue is practically a reprint of the work as published in 1904. There is no need for us, therefore, to do more than to refer our readers to the previous review and to congratulate Dr. Gibson on the success of his labours.

Qualitative Chemical Analysis: Organic and Inorganic. By F. MOLLWO PERKIN, Ph.D. Third impression, second edition. London: Longmans, Green, and Co. 1905. Pp. 308. Price 4s.—We welcomed the first edition of this book because amongst other things it marked a fresh departure in regard to most books of this class, inasmuch as the plan adopted is to bring facts and principles together so that the student may apply for himself his theoretical knowledge to aid him in his practical work and, on the other hand, may bring his practical knowledge to bear on the elucidation of theoretical problems. Moreover, the scientific method is employed of representing the action that takes place in certain chemical changes, as when a precipitate is produced by adding one solution to another, by the movement of the "ions." In the new edition we find that theoretical considerations are extended and a section has been added on "mass action." Several other important additions have been made and altogether the book has been seriously revised. We regard it as one of the foremost guides to qualitative chemical analysis and the reader may be confident that what he reads therein is fully in accordance with the modern developments of the subject.

JOURNALS AND MAGAZINES.

The Liverpool Medico-Chirurgical Journal.—The January issue of this journal is a double number and contains much material of interest. From the surgical point of view we may notice Mr. Charles G. Lee's commendation of Mr. T. Pridgin Teale's operation for the removal of cataract, though from the discussion which followed the paper he does not seem to have convinced his hearers of its superiority to other methods. Mr. Keith W. Monsarrat records a case of fractured femur in a hæmophilic subject which healed satisfactorily. Professor Rushton Parker commends the perineal route for the removal of enlarged prostate in preference to the suprapubic operation and Mr. W. Thelwall Thomas writes of the treatment of concussion of the brain, deprecating the use of the ice-bag in such cases as tending to retard recovery. Dr. Charles J. Macalister discusses the pathology of gastric ulcer and attributes its causation to toxic bodies retained in cases of suppressed menstruation. Professor W. Carter contributes

a self-sought advertisement it is something of a relief to find a serious attempt to present the motives and aims of a few strenuous workers in widely different fields in readable form without any unnecessary personal details.

Mr. Begbie tells us in his preface that his purpose in publishing these studies is twofold: first, to bring into one compass and to present in conversational form the thoughts of leading men working at different phases of modern inquiry, for he finds that there is, especially among scientific men, great insularity of thought and too often a lack of knowledge of the advances made in branches of scientific inquiry other than their own. He therefore hopes that it may be "possible for the reader to make himself at least elementarily acquainted with some of the various activities of modern investigation." The second object is to try to elevate the interview from "the boudoir atmosphere of vulgarity and commonplace" into which it has sunk in this country. The subjects of Mr. Begbie's 20 studies range from His Majesty the King to "the modern surgeon" and comprise such widely diverse personalities as Lord Roberts, Mr. John Morley, Admiral Sir John Fisher, the Bishop of London, Mr. Joseph Chamberlain, the Rev. R. J. Campbell, Mr. H. Beerbohm Tree, and Sir Oliver Lodge. Mr. Begbie is thoroughly in earnest and shows a profound admiration and warm personal regard for many of his subjects. He writes well, in good scholarly English, with frequent allusions to, and quotations from, philosophical, literary, and scientific classics. The keynote is struck in the chapter devoted to the Bishop of London, one of the best articles in the series, in which the motive of the Bishop's life is described as "the gospel of 'worth while.'" Professor W. Osler, in his charming book "*Æquanimitas*," describes the master word in medicine as work, and in like manner these character studies show that the secret of the success of the men whom he discusses is their persistent and untiring striving each in his own special field.

Mr. Begbie's interest in psychical problems and research is made very obvious throughout, but especially in the articles devoted to Sir Oliver Lodge, Sir William Crookes, Dr. Alfred Russel Wallace, Mr. Frank Podmore, and Dr. J. Milne Bramwell. He frequently refers to Frederick Myers's theory of a supraliminal and a subliminal consciousness and makes many references to spiritualistic and occult phenomena, such as hypnosis, telepathy, and thought transference, but always temperately and in critical fashion.

The concluding article is entitled "The Modern Surgeon" and to it there is appended a footnote in the following terms: "Medical etiquette forbids the publication of the name of the eminent surgeon to an intimate knowledge of whom I am indebted for any interest which the reader may find in this attempt to suggest the wonderful romance of modern surgery." Mr. Begbie regrets that the name of the surgeon does not stand at the head of the article but we venture to think that the article gains in value from the anonymity of the subject of it, as it may serve in some respects as a study of a type rather than of an individual. Incidentally Mr. Begbie refers to the striking advances in surgery rendered possible by the discoveries of Lister and Simpson and sketches briefly the career of a medical student. He points out the necessity in the surgeon of rapidity in forming judgments and of adaptability to conditions, perhaps unexpected, occurring during an operation. He sums up the characteristics as "a steady nerve, a sure hand, a quickness of observation, an adaptability of mind, and a swiftness of decision"—a description with which there is no fault to find.

Mr. Begbie's book we have read with pleasure and can commend it to our readers as affording much valuable and interesting information of a stimulating and thoughtful character.

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revolutions per minute if required. Nearly two years' continuous work in hospital and private practice has produced no sign of wear in the instrument used by myself. The illustration practically explains itself, but it may be mentioned that the cylinder, fixed firmly to the base-plate, has a metallic piston accurately ground in so as to be airtight. This is actuated by means of a gun-metal connecting-rod connected above to the disc by a screw, pin, and bush, which enables the stroke to be regulated to any length. In the hand masseur movement of the handle produces with ease 2000 strokes of the piston per minute through a multiplying gear contained in the small square gear box. The piston is open at one end, resembling a petrol motor in construction. I find it considerably facilitates smooth running to keep a little thick lubricating oil in here. The power masseur may be driven by a small electric motor of about 1-16 horse power supplied either from the main or from accumulators; a small water motor answers the purpose equally well.

Concerning the wonderful therapeutic and prophylactic uses of tympanic massage, except in cases with a discharge or myringitis, I need here say nothing beyond the fact that every case should be first carefully examined through a pneumatic speculum (preferably attached to the machine) in order that the exact length of stroke may be employed. On the whole, the shorter this is within active limits the better and the speed should be high. There should be just sufficient suction efficiently to move the drum. In ordering the instrument for home use the surgeon should always set the stroke for the patient; otherwise a hematoma might be produced.

Hertford-street, W.

H. STANLEY TURNER.

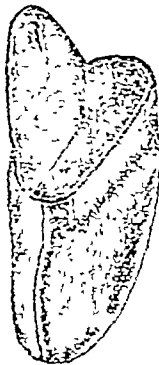
A COLOTOMY TRUSS.

THE want of a good truss has been felt by everyone treating artificial anus after colotomy. The important points in a good appliance of this kind are as follows: (1) it must be worn with comfort and not be bulky; (2) it must stop leakage of faeces; and (3) it must not become plugged with solid faeces. Hyatt's colotomy truss fulfils all these requirements. It consists of a celluloid pad, which surrounds the opening in the colon and has a neck slanting in a downward direction, to which is attached an indiarubber bag, the truss being fastened to the abdomen by an elastic band or belt. The celluloid pad or cup is shown in Fig. 1, the upper end which is in contact with the abdomen being turned away

FIG. 1.



FIG. 2.



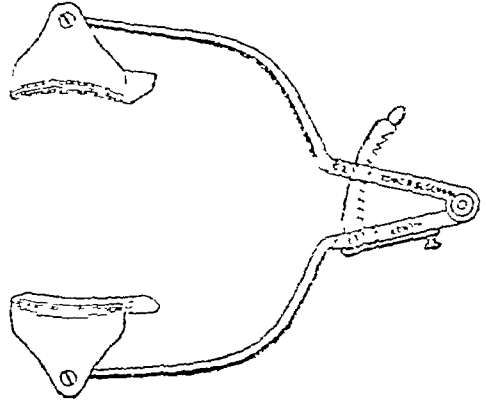
from the beholder. This end measures about four and a half inches horizontally and three and three-quarter inches vertically. The five projecting studs are for the attachment of the retaining belt and the indiarubber bag shown separately in Fig. 2. All the parts are easily taken asunder and can readily be cleaned. This truss has been worn with great comfort by several cases on which I have operated. It is made by Messrs. Brady and Martin, Northumberland-road, Newcastle-on-Tyne.

Bradford.

W. H. HORROCKS, F.R.C.S. Eng.,
Senior Honorary Surgeon to the Bradford
Royal Infirmary.

A MODIFIED KELLY'S RETRACTOR.

I BEG to draw attention to a modification of Howard Kelly's abdominal retractor which I believe will be found very practicable. The instrument is made by Messrs. Krohne and Sesemann of 37, Duke street, Manchester-square, London, W. Kelly's original pattern of this instrument is probably too well known to need either description or recommendation. The modified pattern, of which an illustration is appended, is the one in use at the Samaritan Free Hospital for Women and at St. Mary's Hospital for Women and Children, Plaistow. The chief alteration consists



of a ratchet catch, whereby the instrument is fixed in position automatically without the necessity of having, as in the original retractor, to screw the arms to the tangent. To lessen the expense of manufacture solid tongues are substituted for the forked blades of Kelly's instrument. In the high pelvic posture it is found that the instrument is inclined to slip down but this can be prevented by using safety-pins to attach the arms of the retractor to the aseptic covering which invests the patient. A notch made in each arm just beyond the shoulder of the instrument prevents the safety-pins from slipping.

Harley-street, W.

CUTHBERT LOCKYER.

Looking Back.

FROM

THE LANCET, SATURDAY, March 8th, 1828.

FOREIGN DEPARTMENT.

HOTEL DIEU, PARIS.

The trials made at the Charité to ascertain the effects of chlorine in cases of pulmonary phthisis, have not discouraged the physicians of other hospitals. Trials of this remedy have been made at the Hôtel Dieu by M. Husson. He directed that a woman, who had been attacked for some time with phthisis, should inhale this gas. The new remedy did not improve her condition, and the patient died.

HOPITAL DE LA PITIE.

Dr. Bally has lately employed strychnine internally in paralysis of the bladder, and has obtained from its use very decided benefit. Three patients have been cured in less than a month by this remedy, given in doses from one-tenth of a grain, to two grains every four and twenty hours.

ARE FALSE TEETH NECESSARIES?—At the Taunton county court on Feb. 20th, before his honour Judge Beresford, Mr. A. F. Kendrick, dental surgeon, claimed £5 from a farmer for professional services rendered to his wife. The defence was that false teeth were not actual necessities and therefore the wife should have obtained the husband's consent before being supplied with them. The defendant had recently separated from his wife. His honour decided that the teeth were actual necessities and gave judgment for the plaintiff, with costs.

an interesting paper on Remedies, New and Old, in which he claims good results from the use of sarsaparilla in pulmonary tuberculosis and wasting diseases in spite of the dicta of the pharmacologists that it is quite inert, and also relates some good results in cases of hepatic colic apparently due to the administration of succinate of iron. Mercurial ointment and tartarised antimony are other remedies which receive a word of praise, while the practical omission of venesection from among modern means of treatment is noted with regret. Among the other articles of interest we have only space to mention that by Dr. W. Murray Cairns on Asepsis in Obstetrics, pleading for the recognition of labour as a condition which calls for no less elaborate precautions than does a surgical operation.

The Medical Chronicle—In the February number appears a paper by Surgeon G. M. O Richards, R.N., giving his experiences in searching for the *Spirochæta Pallida* in cases of Syphilis or Suspected Syphilis. The article includes an excellent bibliography of the subject which shows the amount of attention that it has excited. No less than 117 papers are herein contained, although the discovery of the organism was only announced in 1905. Dr. Miles B. Arnold contributes a brief abstract of Some Experiments on the Possible Action of Diphtherial Toxin upon the Excised Frog's Heart, the results being entirely negative. He recommends chinosol as the most harmless antiseptic for addition to serums intended for therapeutic use.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. With lithographic plates and text figures. New series, No. 196 (Vol. XLIX, Part 4). February, 1906. Pp. 158. London: J. and A. Churchill. Price 10s.—The articles contained in this number of the *Quarterly Journal of Microscopical Science* are: 1. Studies in Spicule Formation, by W. Woodland, University College, London, representing a continuation of the author's researches on this subject and especially dealing with the scleroblastic development of the spicules in *Cucumariidæ*, with a note relating to the plate and anchor spicules of *Synapta inhiærens*, with three plates. Mr. Woodland in giving the results of his own researches calls in question the accuracy of those of M. Hérouard who describes the development of the spicules in the *Holothuriadæ* of the French coasts. 2. On the Maturation of the Unfertilised Egg and the Fate of the Polar Bodies in the *Tenthredinidæ* (saw flies), by L. Doncaster, M.A., Mackinnon student of the Royal Society, with two plates. 3. The Role of Mucus in Corals, by J. E. Duerden, Ph.D. Lond., professor of zoology at the Rhodes University College, Grahams-town, Cape Colony. Dr. Duerden shows that nutritive substances constitute stimuli to corals, occasioning a discharge of mucus, by which they are entangled and drawn down the stomodæum by inhalant currents. 4. Observations on the Structure and Life-history of *Pleistophora periplanetæ*, Lutz and Splendore, by W. S. Perrin, B.A., Shuttleworth research student of Gonville and Caius College, Cambridge, with two plates. The organism is a myxosporidian parasite of the ordinary black cockroach. 5. A Study of the Life-history of *Bucephalus Haimeanus*: a parasite of the Oyster, by David Hilt Tennent, with four plates. The

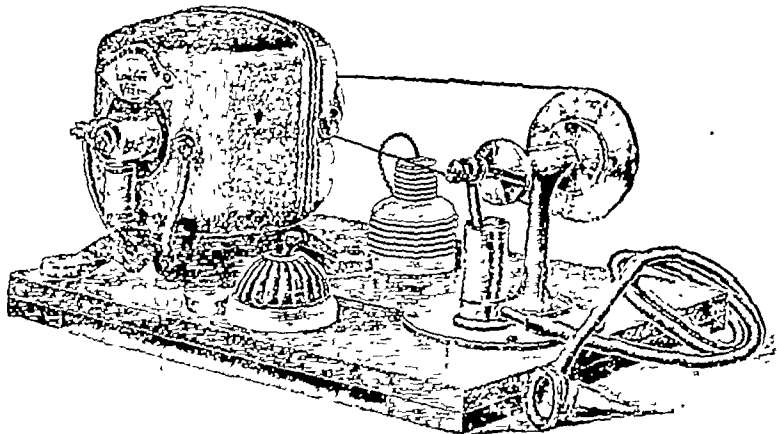
varieties of *bucephalus*, several of which are known, are the larval form of species of *gasterostoma*; they are widely distributed and exercise an injurious influence on the oyster and are well deserving of the careful study which Mr. Tennent has devoted to them, though the toxic action of oysters so infected has not been demonstrated. This part of the journal contains the index to Vol. XLIX.

Ophthalmology. H. v. WURDEMAN, M.D., editor. Vol. II., No. 2, January, 1906. Editorial and publishing office: 105, Grand-avenue, Milwaukee, Wisconsin, U.S.A. Price 6s., or £1 1s. per annum. Pp. 211.—The original articles contained in this number are: 1. History of the Ocular Treatment of Migraine and Headaches, by Oscar Wilkinson, A.M., M.D., of Washington. 2. What are the so called Reflexes which can properly be referred to Eye-strain? by Lucien Howe, M.D., of Buffalo. 3. The Symptoms of Ametropia, by Howard F. Hansell, M.D., of Philadelphia. 4. Retinal Hemorrhages in Apparently Healthy Eyes, by E. W. Stevens, M.D., of Denver. 5. Description of a Single-stitch Operation for Advancement of the Exterior Ocular Muscles, by Charles A. Oliver, M.D., of Philadelphia. 6. A New Punch for removing Membranes from the Post-pupillary Space in Traumatic or Secondary Cataract and for Making an Artificial Pupil (illustrated), by Mark D. Stevenson, M.D., of Akron. 7. Intracocular Irrigation, by J. A. Lippencott, M.D., of Pittsburg, Pennsylvania. 8. Euphtialium Conjunctivitis, by Charles J. Kipp, M.D., of Newark. In addition there are numerous abstracts from American and foreign literature and several reviews.

New Inventions.

A NEW FORM OF TYMPANIC MASSEUR.

THE illustration represents a new form of tympanic masseur which I think will be found a distinct improvement on the ones previously in use. It has been made by Messrs. Mayer and Meltzer of 71, Great Portland-street, London, W., in two forms and can be worked by hand or by power. The former is convenient for a patient's home use and the latter, which is shown in the illustration, for the consulting room where electrical energy or a water motor is available. The principal points of difference between this masseur and the ones hitherto in use are as follows: (1) It is much more substantially constructed; (2) there is no oscillating cylinder; and (3) its principles of construction are sound from a mechanical point of view and admit of wear being taken up or the introduction of new spare parts. It is almost noiseless and can be driven at any speed up to 5000 or 6000



clothed by columnar and spheroidal cells, yet the cervix uteri, vagina, scrotum, penis, and tongue give some of the earliest cases of carcinoma, and these of the squamous-celled variety.

In a second paper,² written jointly by Dr. LAZARUS-BARLOW and Dr. W. GORDON TAYLOR, certain other statistical conclusions are put forward. In order to determine if any variations in the incidence of cancer on the various organs have occurred or are occurring, the various cases of cancer in the Middlesex Hospital have been referred to the year in which they were 35 years of age and presumably healthy and cancer cases have been balanced against cases other than cancer. By this method the results have been obtained in a previous research³ that in the case of women a steady increase in cancer mortality took place in the various years up to about 1870 but that since that time the mortality has remained stationary, while in the case of men a steady increase in cancer mortality has been taking place from the first and is still progressing. In the present paper the figures obtained for various sites have been analysed and the following conclusions have been arrived at: comparing healthy populations at the age of 35 at different periods in the nineteenth century an increase in the mortality from cancer has shown itself or is showing itself in the lip, tongue, floor of the mouth, cheeks, and œsophagus in males, in the stomach, colon, rectum, and anus in both sexes, and in the uterus and breast in females, while a diminution in mortality has occurred or is in progress from cancer of the lip, tongue, floor of the mouth, and the vulva in the female, and in cancer of the skin and rodent cancer in both sexes. On the whole it appears that the increase in cancer which is occurring according to the statistics of the Middlesex Hospital is distributed more or less evenly over all the principal primary seats of the disease and is not markedly associated with any one particular organ, although the alimentary tract shows a distinct increase in both sexes.

Although no startling generalisations have been afforded by these laborious statistical studies but rather a confirmation or correction of the views or impressions obtained by individual observers from smaller numbers of cases, yet the results are of considerable importance, as suggesting possible lines of research to investigate the variations observed and to explain them. The investigation of cancer is now rightly regarded as of such importance that no research which can even possibly afford a clue or in any way increase our knowledge can be neglected and we wish Dr. LAZARUS-BARLOW every success in the use he is making of the valuable records of the Middlesex Hospital, for in spite of the prejudice existing among many people against statistics, when properly studied they afford very valuable information.

The Trial of Pritchard, the Poisoner.

In the series of volumes now being issued descriptive of "Notable Scottish Trials" that most recently published,¹ which contains the case of the infamous Dr. PRITCHARD, is of importance particularly to those interested in forensic

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² Loc. cit., p. 47.

³ Archives of the Middlesex Hospital, vol. III., p. 148.
¹ Trial of Dr. Pritchard, edited by William Roughhead, Writer to the Signet. London: Sweet and Maxwell, Limited, 1905, pp. 343.

THE LANCET.

LONDON: SATURDAY, MARCH 10, 1906.

The Incidence of Cancer in Relation to Sex and Situation.

SEVERAL papers of great interest by Dr. W. S. LAZARUS-BARLOW and his co-workers in the Cancer Research Department of the Middlesex Hospital have recently been published¹ and they afford material for useful and thoughtful consideration in relation to the incidence of cancer as it affects different systems and organs in the two sexes. They comprise a careful statistical and analytical study of 6732 cases of cancer, of which records are preserved, occurring at the Middlesex Hospital between the years 1746 and 1904. Of these cases, 2073 occurred in males and 4659 in females, but these figures must not be regarded as representing the relative frequency of cancer in the two sexes, since there are considerably more beds devoted to cases of cancer in women than in men. It is, of course, only during the later years of this period that the nature of the growth has been confirmed by microscopical examination and although great care has been exercised in the selection of the cases Dr. LAZARUS-BARLOW is of opinion that it is advisable to include the cases under the general term of "cancer" rather than of carcinoma, although it is practically certain that cases of other than carcinomatous nature constitute a small percentage of error. Again, in regard to the question of age a certain reservation is necessary. The ages given in the records are neither those at which the disease first appeared nor those at death, but at some intermediate period which may be taken as that at which the disease made its existence known to the patient or at which it was first recognised. On analysing the cases Dr. LAZARUS-BARLOW finds that there is a general tendency for males to be affected by cancer at a later age than females, the mean age of incidence of cancer without reference to site in males being 55.2 years and that in females 49.9 years. The range of years over which cancer is most liable to occur is practically the same in both sexes—viz., 46-64; cancer of the prostate, however, forms an exception, occurring much later (between 55 and 74), although too much importance cannot be attached to this owing to the small number of cases (10 only) in the series. When the incidence of cancer in relation to the site of the primary growth is considered, some information of much interest is obtained. In males 80 per cent. of all cases of cancer occur in the alimentary tract, while in females 80 per cent. of all cases are found in the generative organs and breasts. When the cases of cancer of the alimentary tract are separately considered it is found that they are seven times as frequent in males as in females, while the cases occur

at a distinctly later age in the former, the mean age of liability of males to cancer of the alimentary tract being 55 years and that of females 52.5 years. A further point of some importance is the statement that the difference in liability of men and women to cancer of the digestive tract progressively and uniformly diminishes as the seat of the primary growth is lower in that tract until in cases of cancer of the anus there is an actual preponderance of females (five males to seven females), although in virtue of the relatively small number of cases no great stress can be laid upon this individual exception to the general rule. In regard to cancer of the liver and bile passages the statistics are, of course, less to be relied upon than in those of other parts, owing to the probability that cases of secondary growth have been included as primary. In the same volume, however, there is a paper by Dr. H. A. COLWELL in which only the cases of malignant disease of the liver and bile passages observed in the post-mortem room have been studied. Dr. COLWELL finds that in 3300 post-mortem examinations there were 41 cases of primary carcinoma of the liver, 31 cases of primary carcinoma of the bile passages, while in 608 cases there were secondary growths in the liver. In Dr. LAZARUS-BARLOW'S statistics it was found that carcinoma of the liver and bile passages gave a higher mean age for females than for males—viz., 54.1 years as against 52.9. This in the light of Dr. COLWELL'S observations is entirely due to the later age at which women suffer from cancer of the gall-bladder and bile passages. When the cases of cancer of the generative organs are considered it is found that in both sexes these tend to be the earliest affected by cancer. The great preponderance of its incidence in this system in the female is very striking, since cancer of the female generative tract constitutes 45 per cent. of all cancer occurring in females, while cancer of the breast contributes another 37.8 to the total. The uterus is the site of the great majority of the cases of cancer of the female generative organs, since the figures for the vagina and the vulva do not differ greatly from those for the penis and the scrotum in the male. The uterine cases afford the earliest mean age of cancer in females—viz., 46.7 years—while the mean age for cancer of the vagina is three years later and that for cancer of the vulva six years later still. In both sexes the cutaneous system shows the latest tendency to the development of cancer, the mean age amongst men being 60.3 years and that in women 55.9 years. In regard to rodent cancer the mean ages were 58.2 and 59.3 years respectively in 119 male cases and 83 female cases. In regard to cancer of the larynx the figures are liable to the source of error introduced by the inclusion of cases primarily œsophageal in origin, but among 31 cases classified as cancer of the larynx 26 were in males, with a mean age of 55.9 years, and five were in females, with a mean age of 53.6 years. Dr. LAZARUS-BARLOW finds that his statistics afford no support to the view that the early or the late appearance of carcinoma at any given site is determined by the character of its epithelium, for although the skin in which the squamous variety is the commonest form affords the latest age incidence, and although parts of the alimentary tract lined by squamous epithelium are usually affected later than those

¹ Fourth Report from the Cancer Research Laboratories. Archives of the Middlesex Hospital, vol. v. London. Macmillan and Co. 1905.

clothed by columnar and spheroidal cells, yet the cervix uteri, vagina, scrotum, penis, and tongue give some of the earliest cases of carcinoma, and these of the squamous-celled variety.

In a second paper,² written jointly by Dr. LAZARUS-BARLOW and Dr. W. GORDON TAYLOR, certain other statistical conclusions are put forward. In order to determine if any variations in the incidence of cancer on the various organs have occurred or are occurring, the various cases of cancer in the Middlesex Hospital have been referred to the year in which they were 35 years of age and presumably healthy and cancer cases have been balanced against cases other than cancer. By this method the results have been obtained in a previous research³ that in the case of women a steady increase in cancer mortality took place in the various years up to about 1870 but that since that time the mortality has remained stationary, while in the case of men a steady increase in cancer mortality has been taking place from the first and is still progressing. In the present paper the figures obtained for various sites have been analysed and the following conclusions have been arrived at: comparing healthy populations at the age of 35 at different periods in the nineteenth century an increase in the mortality from cancer has shown itself or is showing itself in the lip, tongue, floor of the mouth, cheeks, and œsophagus in males, in the stomach, colon, rectum, and anus in both sexes, and in the uterus and breast in females, while a diminution in mortality has occurred or is in progress from cancer of the lip, tongue, floor of the mouth, and the vulva in the female, and in cancer of the skin and rodent cancer in both sexes. On the whole it appears that the increase in cancer which is occurring according to the statistics of the Middlesex Hospital is distributed more or less evenly over all the principal primary seats of the disease and is not markedly associated with any one particular organ, although the alimentary tract shows a distinct increase in both sexes.

Although no startling generalisations have been afforded by these laborious statistical studies but rather a confirmation or correction of the views or impressions obtained by individual observers from smaller numbers of cases, yet the results are of considerable importance, as suggesting possible lines of research to investigate the variations observed and to explain them. The investigation of cancer is now rightly regarded as of such importance that no research which can even possibly afford a clue or in any way increase our knowledge can be neglected and we wish Dr. LAZARUS-BARLOW every success in the use he is making of the valuable records of the Middlesex Hospital, for in spite of the prejudice existing among many people against statistics, when properly studied they afford very valuable information.

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² Loc. cit., p. 57.

³ Archives of the Middlesex Hospital, vol. III., p. 152.
¹ Trial of Dr. Pritchard, edited by William Roughead, Writer to the Signet. London: Sweet and Maxwell, Limited, 1905, pp. 335.

in to attend her and who had seen her daughter but had not advised with regard to her, was asked by PRITCHARD to certify the cause of Mrs. TAYLOR's death but refused to do so, adopting a course which will be referred to hereafter, and her son-in-law himself took the responsibility, describing the cause of death as "Paralysis, 12 hours; apoplexy, 1 hour." Mrs. PRITCHARD died on March 18th and on the 20th her husband certified the cause of her decease as "Gastric fever, two months." This term he had always applied to her illness in speaking of it to the three medical men who had attended her. These now included Dr. PATERSON, who had seen her a second time after the death of Mrs. TAYLOR and had apparently from the first formed with regard to her a perfectly correct opinion that she was being poisoned with antimony but had said nothing to anyone on the subject.

At this point, therefore, we find Mrs. TAYLOR three weeks dead and safely buried, and Mrs. PRITCHARD dead, duly certified, and ready to be consigned to the grave and to oblivion. Her body had been removed to Edinburgh for interment beside that of her mother, and PRITCHARD had accompanied it thither to have the coffin opened for the inspection of his wife's relatives and to kiss her dead lips in their presence! Meanwhile, however, an anonymous letter, since attributed to Dr. PATERSON but denied by him, had reached the Procurator-Fiscal and had set moving the avalanche that was to overwhelm the murderer. Once in motion it did not take long to gather weight. His wife's body, saturated with antimony, lay unburied and her mother's, similarly impregnated, only required the order of the proper authority for its exhumation. Post-mortem examination followed by chemical analysis proved the presence of the drug and the murderer's certificates as to the cause of death were disproved conclusively. The particulars given by PRITCHARD upon Mrs. TAYLOR's death-certificate and many other statements made by him were contradicted by the evidence of eye-witnesses. Purchases of large quantities of antimony and of aconite were shown to have been made; antimony was found in the remains of the taploca referred to, in a bottle from which Mrs. TAYLOR was in the habit of taking an opiate and elsewhere, and in Mrs. TAYLOR's opiate there was also present aconite, this lady's symptoms being proved to have been characteristic of poisoning by that drug, as well as of poisoning by antimony. The late Sir DOUGLAS MACLAGAN, Professor of Jurisprudence in the University of Edinburgh, his assistant, Dr. ARTHUR GANGLIE, F.R.S., and Dr. (now Sir) HENRY DUNCAN LITTLEJOHN, marshalled the scientific evidence upon these points with convincing clearness and force, the poisoner's ultimate confession being rendered superfluous for all thinking persons. The whole mass of evidence is given in Mr. ROUGHHEAD'S highly interesting book; it is sufficient to say here that it was overwhelming. The case of PRITCHARD is therefore of particular interest to medical men, as it shows how completely murder by poisoning can be established by scientific evidence. The jury deliberated for less than an hour and returned a verdict of guilty of both crimes without a dissentient opinion.

If, however, the fact that PRITCHARD committed these two murders was clearly proved by well-marshalled and admirably prepared medical testimony when once suspicion fell upon him, it will be observed that he might have escaped being suspected. We have referred to the anonymous letter and to the conduct of Dr. PATERSON, upon whom some blame fell for having entertained the opinion that a crime was being perpetrated and for having done nothing effective to prevent it. When Mrs. TAYLOR died, whom he had seen once, he refused to certify the cause of death; but he wrote to the registrar a letter which, from his own account of it, was calculated to arouse suspicion, ending with the phrase, "The death was sudden, unexpected, and to me mysterious." This letter, of course, was duly signed. Nothing came of it and the conduct of the registrar, who had destroyed it, in subsequently accepting the certificate of PRITCHARD does not seem to have provoked much comment at the trial. The anonymous letter, whoever may have written it, was addressed to a very different official, the Procurator-Fiscal, and although unsigned and couched in somewhat vague terms bore immediate results. The Lord Justice-Clerk expressed, in his summing up, profound disapprobation of Dr. PATERSON'S silence, saying: "I care not for professional etiquette or professional rule. There is a rule of life and a consideration that is far higher than these, and that is the duty that every right-minded man owes to his neighbour to prevent the destruction of human life in this world, and in that duty I cannot but say Dr. PATERSON failed." These weighty words were endorsed then, as they will be now, by the medical profession. It is no part of the medical man's duty to go out of his way to play the detective, but he owes a duty to his patient the essence of which is the protection of his or her life. He owes no less a duty to every fellow citizen, whether his patient or not, whose danger becomes apparent to him. His duty may be a difficult one to perform, it may involve personal inconvenience, grave anxiety and responsibility, or even personal danger to himself, but if he shirks it he will be rightly blamed. The full text of Dr. PATERSON'S defence of his own conduct may be studied among the appendices collected by Mr. ROUGHHEAD and a very caustic reply to this document will be found in a leading article in these columns published on July 22nd, 1865. From a professional point of view Dr. PATERSON'S attitude formed one of the most interesting features of the poisoner PRITCHARD'S trial.

PRITCHARD was a calculating and cruel villain, finding his parallel in PALMER, who no doubt committed more murders, but who, like PRITCHARD, poisoned his wife and his mother-in-law; and the two with LAMSON make a notable trio. But the medical profession before grieving over its connexion with such monsters may remember that the three cases are alike in this—the unerring science of the profession which they had disgraced brought them to the gallows, and the fact that they were members of our body so far from affording them facilities for perpetrating their crimes with impunity, served rather to assist in bringing home their guilt to them.

Repeated Cæsarean Section.

CASES of Cæsarean section repeated on the same patient are of relatively infrequent occurrence. There are several reasons which may be put forward in explanation of this fact. The chance that the patient has been sterilised at the first operation, the likelihood of a subsequent pregnancy terminating prematurely, and the deliberate avoidance of pregnancy may all explain the rarity of such operations. A number of cases, however, have been recorded by various writers on this subject and M. FRUINSKOLZ recently read before the Society of Obstetrics, Gynecology, and Pædiatry in Paris the details of a case in which Cæsarean section had been performed three times on the same patient. In her first two labours the woman had been delivered after craniotomy, whilst in the third and fourth Cæsarean section had been practised. In the fifth pregnancy the membranes ruptured at the eighth month and it was decided to perform Cæsarean section. Very numerous adhesions were found to be present between the uterus and the abdominal walls. The child weighed 1800 grammes and was extracted alive. A sixth pregnancy terminated by an abortion. The case of this determined lady offers a good text for a few general remarks.

There are several interesting and important questions to be considered in these cases of repeated Cæsarean section. The most difficult one to come to a decision upon is whether the operator is justified in allowing the patient to run the chance of again becoming pregnant. Should he or should he not endeavour to sterilise the woman by some such procedure as removing the uterus, or ligaturing the Fallopian tubes, or the more certain method of excising a portion of the tubes? In all instances the final decision in such a case naturally must rest with the patient or her husband. We consider that it is the duty of the surgeon to place before her the risk of her baby being stillborn or dying subsequently, and also the risk she runs in submitting to another Cæsarean section. When we take into account the very low mortality attending a Cæsarean section at the present day, when performed as an operation of election, we do not think that any surgeon is justified in recommending a patient to be sterilised or in taking steps to insure this result, except at the express desire of the patient or of her husband, and only then if he has done his best to dissuade them from such a decision. The recorded cases show that the performance of a second or a third Cæsarean section is a very safe procedure. In 62 cases collected by Dr. ARTHUR J. WALLACE there were only four deaths, or a percentage mortality of 6.45. If we examine the details of these four fatal cases more closely we find that two of them occurred in the year 1884; and of the other two in one the uterus was not sutured and in the other a small wound of the intestine occurring at the time of the operation was overlooked. We, therefore, safely may conclude that at the present day the results would be even more favourable. The difficulties of the operation depend to some extent on the question as to whether adhesions to the anterior abdominal wall are present or not and whether they are sufficiently widespread to enable the subsequent operations to be conducted without

opening the peritoneal cavity. Dr. WALLACE gives some interesting details upon this point. Of 43 cases in which the presence or absence of adhesions is mentioned, in 11, or 25 per cent., adhesions were practically absent and in the remaining 32 cases, or almost 75 per cent., marked adhesions were found. In only three of these cases, however, were the adhesions so widespread as to make the subsequent operation absolutely extraperitoneal in character. In five other cases they were absent over a very small area, so that the repeated operation was not entirely extraperitoneal.

In cases where the patient is not sterilised, in view of the possibility of future pregnancies an attempt should be made to insure the formation of extensive peritoneal adhesions. Unfortunately, we have no certain method of obtaining this desirable result. The manner in which the densest adhesions disappear is the wonder of the surgeon, when he reopens the abdomen after a previous abdominal section in which there may have been the most extensive matting of the various structures. The permanence or otherwise of peritoneal adhesions would appear to depend on the degree to which the endothelium of the peritoneum itself has been damaged. If it be irrevocably destroyed then the chance of more or less permanent adhesions forming is very considerable. At the same time, we must bear in mind that the destruction of the endothelium greatly increases the danger to the patient, since it allows of the ready absorption by the vessels of any organisms or toxins which may be introduced into the peritoneal cavity. The presence of other than complete utero-parietal adhesions renders a subsequent operation more rather than less dangerous. Their separation may prove tedious and difficult or lead to injury of the intestine, especially if the adhesions involve the bowel. The necessary manipulations may also lead to the occurrence of post-partum hemorrhage or to hemorrhage from the tearing of vessels in the new tissue. If the attempt, therefore, to obtain complete adhesion of the anterior surface of the uterus to the abdominal wall fails the danger to the patient may be increased rather than diminished. Some authors contend that the formation of such adhesions indicates that the asepsis of the operation has been defective. This may be so but the observations of Professor WELCH have shown that even from wounds running an aseptic course an organism, the staphylococcus albus, may be cultivated with considerable frequency. It is, however, certain that mere trauma may cause the formation of adhesions in the peritoneal cavity, and in future if the view that these patients should not be sterilised in ordinary circumstances be adopted it will no doubt become more and more the aim of the operator to set up such utero-parietal adhesions. M. FRUINSKOLZ asks if the presence of the adhesions in his case did not play a part in producing the abortion in the sixth pregnancy? Possibly this may have been so but, as he rightly observes, the union of the uterus to the abdominal wall in these cases is not comparable to that obtained in the operation of ventrofixation of the non pregnant uterus. The general trend of opinion amongst practically all the leading obstetricians in different countries at the present time is towards the extension of the indications for the performance of Cæsarean section in cases where the life of the child is likely

to be endangered if delivery be attempted *per vias naturales*. If such a view is to be acted upon generally then it will be incumbent upon the operator to consider very seriously his duty to the mother and to her unborn child and to hold well defined views upon the moral questions which are involved in the decision of the patient for or against sterilisation and upon the further surgical question which arises if she decides to run the risk of another Cæsarean section whether he is to aim at the production of extensive utero-parietal adhesions or not. As we have indicated, our opinion is that the surgeon unless in very exceptional circumstances should advise against sterilisation, and as the danger of any subsequent operation of the same kind would appear to be lessened by their presence he should aim deliberately at the production of extensive utero-parietal adhesions.

The Feeding of Children attending Public Elementary Schools.

ON March 2nd the Education (Provision of Meals) Bill passed its second reading in the House of Commons and was referred to a Select Committee. We have upon previous occasions¹ commented on the report of Lord LONDONBERRY'S Inter-departmental Committee which was appointed to consider certain points arising out of this question, and there is without doubt a consensus of opinion that it is mere waste of time and energy to try to teach a starving child. But the discussion of the question involves the consideration of problems which affect the very foundations of our present social order, and although these questions are outside our province yet we cannot consider the main question without at least a reference to such problems. The Bill now before the House of Commons is very short—in fact, for all practical purposes it consists of one clause, for the first clause deals with the short title and construction. The operative clause is Clause 2, "the principal Act" being the Education Act of 1902, as extended by the Education (London) Act, 1903. Clause 2 runs as follows:—

When the local education authority, for the purposes of Part III. of the principal Act, resolve that any of the children in attendance at any public elementary school within their area are unable by reason of lack of food to take full advantage of the education provided for them, the local education authority shall take such steps as they think fit to provide food for such children (and, if the local education authority think fit, for any other children in their schools) under such regulations and conditions as the local education authority may prescribe, including, if they so resolve, the making of a charge to recover the cost from the parent or guardian, provided that no provision of food under this Act shall be deemed to be parochial relief.

The debate in the House of Commons was of great interest and among many noteworthy speeches the most noteworthy were those delivered by Sir HENRY CRAIK, Sir WILLIAM ANSON, Dr. MACNAMARA, and Mr. BIRRELL respectively. The first-named laid great stress upon what is apparently a blot upon the Bill—namely, that any children in the schools might be fed by the local authority. We have used the word "apparently" because we think it possible that the framers of the clause had in mind the cases to which Sir WILLIAM ANSON referred in his able criticism of the Bill—

namely, those of parents who are unable to feed their children, not because of unwillingness to do so or because they cannot afford to do so, but simply because they themselves have to be out at work all day. Dr. MACNAMARA, whose personal experience as an elementary school teacher and a member of the late London School Board entitles him to be listened to on this matter with every respect, was very insistent upon the necessity for strengthening parental responsibility. He gave an outline of his own personal proposals as follows:—

The scheme of those who favoured the provisions of this Bill was to feed the child and then to pursue the parent. Personally he would take all the poorer areas of great towns and schedule them, linking the schools in those areas by half dozens. He would then provide a central dining hall for each group of six schools and give the parents notice that they could go to the offices of the local authorities and buy a book of dinner coupons. They should pay for them if possible; if they were unable to pay they should receive them gratuitously to give them to their children to procure one square meal, instead of permitting them to slouch about the streets picking up the garbage in the gutters. The teachers and attendance officers should also have coupons to give to the children; and when they had provided all this machinery then they should pursue the parent for all that he was worth. If the parent was a drunken, worthless person, then whip him at the cart tail.

Dr. MACNAMARA proceeded to mention the *cantines scolaires* which exist in Paris and provide eight million meals for £75,000 (of these more anon). Such a scheme in London, he calculated, would not cost the rates a farthing in the £. We cordially agree with much that Dr. MACNAMARA said, but his economical estimate fails to reassure us. We can all remember the time when the education rate was never to be more than 3d. in the £. It is now 1s. 7d. However, that point is not exactly within the scope of THE LANCET. Nor are we here concerned with the conflicting social principles as to whether the State or the parents should be responsible for the feeding of children whom the State compels to go to school. The main point is the absolute necessity, on grounds of health, that children attending school should receive suitable food, if the attempts to educate them are not to be made of no effect, and if the physique of the coming generation of adults is not to suffer from the attempts to improve its mental capacities. The Bill leaves it in the hands of the local authority "to take such steps as they think fit to provide food for such children (and, if the local education authority think fit, for any other children in their schools) under such regulations and conditions as the local education authority may prescribe, ..." The various local authorities will have no easy task. Unless all school children are to be fed indiscriminately there is the question of the selection of recipients. Then there is the organisation for the distribution of the meals. The London teachers have done admirable work in voluntarily assisting in the distribution of meals to school children, but since the education committee of the London County Council has decided that they shall assist as part of their teaching duties they are naturally feeling injured. Another point is that there will have to be some visitation of homes such as is undertaken by the members of the *caisse des écoles* in France in order that parents who are in real want may be separated from those who are merely shiftless and drunken, and that in either case the children should not suffer. Another point occurs which may seem to be

¹ THE LANCET, Dec. 2nd, 1905, p. 1629, and Jan. 20th, 1906, p. 174.

sentimental but it is one of real importance to a child: some measure should be taken so that a child who is fed because his parents are unable or unwilling to feed him should not be earmarked by his schoolfellows either as a black sheep or as lower in the social scale than themselves. Everyone will recollect LAMB'S tale of the Bluecoat boy who gathered scraps really destined to feed his parents and the undeserved sufferings to which he was subjected by his schoolfellows, because they considered him to be either unwarrantably hungry or else to be making money by the sale of the said scraps.

Mr. BIRRELL, the new Minister for Education, seemed to favour some attempt to imitate the Parisian *cantines scolaires*. What had been done in Paris, he urged, London should also be able to do. In Paris 10,500,000 meals had been served in 1904 and he thought that a large proportion of them had been paid for by the parents. We may point out with legitimate complacency that long ago we foresaw the importance of the object-lesson given by this great French experiment. Consequently we sent our Special Sanitary Commissioner to make full inquiries on the spot. His report constituted, we believe, the first complete history of the origin and development of the *cantines scolaires* that has appeared in the English language. It was published in our issue of Sept. 17th, 1904, p. 860, and has since constituted a sort of text-book from which innumerable quotations have been made—for the most part unacknowledged—at the public meetings and conferences where the question of meals for school children has been discussed. The difficulty, so far as England is concerned, is that the *cantines scolaires*, as fully explained by our Commissioner, arose out of the *caisse des écoles* or school funds, founded for the promotion of education and recognised by the State so far back as 1667. The friends of education who deal with these funds have evolved with the times and are now acknowledged representatives of a public need. They are non-sectarian; they eschew all idea of patronage. They are inspectors elected by all and sundry who hold the cause of education sufficiently sacred to subscribe 10 francs or more towards the school funds. No such instrument for the administration of the school kitchens exists in England, so that the Parisian method cannot be imitated in its entirety. Still no system has been more successful in maintaining and developing the sense of self-respect and dignity among the children. While theorists squabble over the almost impossible task of reforming worthless parents, the French school authorities have concentrated their energies on the more hopeful task of dealing with the child, endeavouring to protect them from baneful home influences. Mr. BIRRELL thinks that London should be able to do all this as well as Paris. It will be difficult and that, perhaps, is only an additional reason for setting to work in real earnest. The Bill is now referred to a Select Committee and we may hope that the various points to which we have alluded will be considered in detail. In the report and the minutes of evidence of the Inter-departmental Committee appointed in 1905 by Lord LONDONDERRY the members of the Committee will find the opinions of those best qualified to speak on the subject, and in our columns they will find a full and easily comprehensible description of the *cantines scolaires*.

Annotations.

"Ne quid nims."

"TABLE D'HÔTE CONSULTATIONS."

"SOME years ago," writes an Italian correspondent, "THE LANCET" drew attention to a practice as dangerous and 'irregular' as it is (or was) but too common—that of asking and receiving medical advice across the pharmacist's counter—and it illustrated its remarks by a disastrous and all too typical case which occurred on the Neapolitan Riviera when an overdose of aconitum napellus 'wrought the well-nigh instantaneous deaths of both parties to the transaction—the "patient" who asked to be prescribed for and the "consulting pharmacist" who had the "courage of his prescription" and experimented on himself with the fatal dose.' Since then, in such centres as Rome, Florence, Bologna, Milan, and other north Italian cities, the law imposes severe penalties on contravention of the statutory conditions under which the pharmacist carries on business and though the said law is even yet notoriously contravened the contravention is generally restricted to cases of trifling import, far removed from such 'playing with edged tools' as ended so tragically in the Neapolitan suburb. There is, however, another form of 'irregular' practice which the law is powerless to reach—practice for which the 'patient' is primarily to blame and of which he (or more often she) must abide the consequences, as the 'consultant,' invariably an amateur, owes allegiance to no school but that of his (or her) individual experience. I allude to what an Italian journalist has aptly called 'Table d'Hôte Consultations' or 'Winter Garden Prescriptions,' exemplified in such cases as the following. An invalid alights at a hotel in one or another of the largely frequented health resorts on the Mediterranean seaboard and having called in the duly qualified practitioner resident in the place is skilfully examined and properly advised as to his ailment, the advice being usually accompanied with a carefully considered prescription. That same evening the patient finds himself beside an affable and communicative inmate of the hotel, in the winter garden or at the table d'hôte, and in the course of conversation discloses the object of his visit to the place and the symptoms of which he complains. His auditor, oddly enough, has come for the very same reason; indeed, this is his third or fourth visit, which is by no means *motivé* by any medical advice to be had on the spot. Oh, dear no! The remedial or restorative virtues of the climate are of themselves sufficient to give and maintain health and the physician's prescriptions are as unnecessary as his fees are high. Personal experience, reinforced by that of others 'who had just the same symptoms,' is pressed into the discussion with the result all too common that the new arrival is as easily persuaded as any convert to 'Christian Science,' the physician is ignored, and his prescription silently dispensed with almost as soon as it is dispensed. No *habitude* of a hotel or pension of invalid resort in the 'Sunny South' but can recall many such cases as that reported above, while physicians of all nationalities have often to find themselves (unwittingly) repeating a prescription by which the now disilluminated patient might long before have benefited at the hands of the colleague originally called in. The distrust born of ignorance or inexperience in weakly constituted minds, often instigated, moreover, by false economy, accounts for the readiness with which so many of the invalid public fall victims, in their sojourn abroad, to the glamour of the self-important, officious

¹ THE LANCET, June 5th, 1897, p. 1558, and March 8th, 1893, p. 625, under the heading "Cross-Counter Therapeutics."

amateur always to be found in fashionable, generally idle, 'society.' Such victims, indeed, would be more frequent than they are but for the temptations they offer to the satirist whose humour knows but the one restraint of compassion—compassion for the evil, sometimes tragic, consequences of the 'practice' which he ridicules."

LOATHSOME BED "STUFFING."

THE following story has quite recently reached us from a correspondent: A fairly large manufacturer, he writes, told me (and made no secret of the fact) that at his mills they took in a large quantity of old clothes. These had the buttons, &c., removed and were at once turned into "flock" without any washing or disinfecting whatever, and used in that state to make cheap new mattresses. For higher price mattresses they wash this "flock" under heavy rollers, and all made with this "stuffing" are stamped "guaranteed washed filling." We are quite prepared to credit this story, for two years ago we referred to a paper read before the Congress of the Sanitary Institute in Glasgow by Mr. Peter Fyfe, entitled "What People Sleep On," in which the writer showed that a certain section of the bed-making trade made mattresses from a mass of rags rejected by every class of the population. There was no attempt to disinfect these rags or even to clean them. In 1905 the Home Secretary was asked a question on this subject and his astounding reply was: "The compulsory cleaning of the materials referred to could not be generally secured under the existing law. The point has been noted for consideration but I cannot at present hold out any prospect of legislation on the subject." If ever an opportunity presented itself to our new legislators of convincing the country of their concern for the public health this is surely one. So far as we can discover, no steps have been taken and the filthy practice goes on unchecked and sanitary officers are powerless to interfere. The horse in the stable is much better looked after, for at least it is provided with clean straw or a clean cork litter. This scandal demands instant suppression and we commend to the Government the desirability of prosecuting an immediate inquiry into this disgraceful breach of common hygienic principles. Little wonder that the dissemination of disease is so often obscure and that it is frequently found in the poorer districts that the bed of the patient emits a foul and sickly smell.

FEBRUARY AT HOME AND ABROAD.

IN almost all parts of this country and at most of the foreign resorts the weather of last month was both wetter and colder than during the corresponding period of 1905. The most striking difference, however, was in these islands, especially at Torquay, where the average temperature a year ago was 3° higher than it was last month. It is gathered from the annexed table that the difference in the average warmth between the centre of England and Algiers during the past month was 15·5° F., while the difference between the former regions and Nice and Florence was only 5°. The mildest spot in the United Kingdom, the Scilly Isles, was just equal to Rome in average warmth and far superior to it in the warmth of the average night, being equal in that respect to Biarritz. At Scilly and Algiers the sheltered thermometer descended no lower than 36°, but at all the other resorts, except at Palermo and Naples, which narrowly escaped, more or less frost was experienced. So cold were the nights at Nice that the average minimum temperature was only 2° above the freezing point, the same as in London, and 2° and 3° lower than at Torquay and Jersey. At all the southern stations except Florence the temperature of the afternoons was higher than in any part of this country;

Nice and Biarritz both recorded a mean daily maximum of 50°, while Rome and Naples were a trifle warmer, as Lisbon, Palermo, and Algiers much warmer. The afternoons in Algiers were as warm as those generally experienced at the end of April in London and on the south coast of England and the nights were as mild as those in London towards the end of May. The most equable temperature on the continent was at Biarritz, Naples, and Lisbon where the small range of 10° or 11° was just the same as that on the south-west coast of these islands as at London. As usual, however, none of the stations whether at home or abroad, could vie with the Scilly Isles where the greatest difference of temperature during the whole month was no more than 16° and the average difference between the day and night was only 8°. The wettest spots abroad were Biarritz, with the excessive rainfall of 10·29 inches and with 21 days on which the rain gauge yielded at least 0·04 inch, and Palermo, where 17 days with rain gave the large total of 7½ inches. At Florence rain only occurred on ten days, at Lisbon on seven, and at Nice on no more than five. The wettest parts of our own south-west coast were very dry when compared with the south-west of France, Palermo, and Algiers. About the middle of the month the precipitation sometimes took the form of sleet or snow in the Riviera and north of Italy, and the south-west of France occasionally experienced severe thunderstorms accompanied by hail.

Stations.	Highest temperature.	Lowest temperature.	Mean maximum.	Mean minimum.	Range.	Mean temperature.	Total rainfall in inches.
Nice	57	28	50	34	16	42·0	1·81
Biarritz	64	30	50	40	10	45·0	10·29
Florence	57	25	43	36	12	42·0	3·71
Rome	57	30	51	37	14	44·0	4·93
Naples	57	33	51	41	10	46·0	5·23
Palermo	72	34	57	43	14	50·0	7·50
Algiers	75	36	59	46	13	52·5	6·66
Lisbon	65	30	56	45	11	50·5	1·59
Paris	55	23	44	32	12	38·0	1·27
London	50	27	45	34	11	39·5	1·65
Scilly Isles	52	36	48	40	8	41·0	3·92
Jersey	52	32	48	38	10	43·0	3·61
Torquay	52	30	47	37	10	42·0	3·81
Bath	51	22	45	32	13	38·5	2·10
Nottingham	49	22	43	31	12	37·0	2·03

THE DEATH OF PROFESSOR S. P. LANGLEY.

THE death of Professor Samuel Pierpont Langley, late secretary of the Smithsonian Institution at Washington, is a grievous loss to physical science. The public will associate his name perhaps more prominently with his practical experiments on flight or aero-dynamics and his popular expositions of astronomy than with his purely physical researches. His name will probably endure most in connexion with his invention of an exceedingly ingenious and delicate instrument for the detection of very minute changes of temperature which is known as the bolometer. It was an adaptation of Wheatstone's bridge, into the branches of which a number of slender wires of steel and platinum are inserted. These wires have equal resistances at the same temperatures, but if one section of the wires is heated the resistance to the current is increased. The galvanometer placed in the bridge which is at rest when the two sets of wires are at the same temperature, is deflected in consequence of the difference in intensity of the currents flowing in opposite directions in the bridge. The instrument, it is said, will accurately

register a change in temperature of one-millionth of a degree centigrade and is sensitive to the heat of a candle one and half miles distant. The instrument has thus been the means of revealing rays where no rays had been thought to exist. Professor Langley was a D.C.L. Oxford and D.Sc. Cambridge and was well known in literary and scientific circles in this country.

THE EMPIRE'S SCHOOL OF TECHNOLOGICAL SCIENCE.

IN a letter addressed to Lord Rayleigh as President of the Royal Society and published in the *Times* on Wednesday last Professor E. Ray Lankester calls attention to the fact that with the abolition of the present Royal College of Science in favour of the new technological institution the present means of research and training provided at the old college in the higher branches of biological science threaten to be suppressed. As Professor Ray Lankester points out, the Royal College of Science as at present constituted provides laboratories, professorships, original investigations, and systematic teaching in several subjects not embraced in the departmental scheme for a new institute of applied science, and these subjects are zoology, botany, geology, and astronomical physics. Every scientific man must admit that biological science at any rate has a very important bearing on many branches of technology. The agricultural industry need only be mentioned as an example of a pursuit the future of which must depend very largely on biological knowledge. We are hardly willing to believe that it was the intention of the Departmental Committee to omit the important subjects mentioned by Professor Ray Lankester from the great national scheme of technological education. At all events, we may safely leave Professor Ray Lankester's appeal in the hands of the Council of the Royal Society, the members of which are bound to acknowledge the claims of the subjects set out and thereupon to urge upon the Government the importance of including the pursuit of biological research amongst the studies in applied science already provided for in the new scheme.

APPENDICOSTOMY.

Ex appendice semper aliquid novi and the most recent novelty is appendicostomy. Yet, after all, it is not so very new, for the first case was reported by Dr. Robert E. Weir of New York in August, 1902, so that it has been known about four years. This first case was hardly intentional, for Dr. Weir had opened the abdomen for the purpose of making an opening into the cæcum, when the appendix appeared and seemed to offer itself as more suitable for the purpose. The appendix was brought to the surface and opened. The operation was performed a few times in this country but it excited little attention until Mr. C. B. Keetley read a paper on the subject last year at the Leicester meeting of the British Medical Association and now the subject has been brought prominently before the profession by the appearance in THE LANCET of Feb. 17th, p. 419, of an article on Appendicostomy by Sir William H. Bennett. One of the most striking points about the operation is the ease with which it is performed. Local anaesthesia or gas and oxygen will suffice for the first portion of the operation when the appendix is drawn through the abdominal wall and no anaesthetic is needed when the appendix is opened. Already many uses have been found for appendicostomy. The first that suggests itself is the flushing of the large intestine in mucous colitis, dysentery, and other forms of inflammation of the colon. It has also been employed with success for intractable constipation. Other indications appear to be certain forms of severe intestinal distension and for the local treatment of some forms of ulceration of the lower part of the ileum it may perhaps

be used. Appendicostomy has also been suggested by Sir William Bennett as a means of administering nourishment in cases where nutrient enemata are now employed, and as the area for absorption would be vastly greater than in rectal feeding we should imagine that the result would be much better, but we have not yet heard of any case in which this operation has been employed for this purpose. There is one point that seems to be of importance and that is, that once the opening is made there is no necessity to close it, for the aperture of the appendix does not leak but it remains available at any future time when need may arise. It is possible that some amount of contraction or even obliteration of the opening may occur after a time. At last, it may be said, a use has been found for the appendix. Blamed as it has been for many years as not only a useless, but a harmful, vestigium, it cannot fail to be a cause of satisfaction to the appendix to be rehabilitated in public estimation as a convenient and even valuable side entrance to the large bowel.

THE HEALTH TEMPLE AT COS.

IN the fifth century B.C. there were two great schools to which the world looked for its masters in the healing art—the School of Cnidos and the School of Cos. Of these the latter is much the more famous, thanks to its inspiring head Hippocrates, revered in his own time as possessing a more than human share of the "*mens divina*" and respected even in the day now passing as the "Father of Medicine." This high distinction he owes to his undoubted priority in basing the medical art upon nature-study, a priority conspicuous not only in his clinical methods but in his enlightened views on the effects of "air, water, and locality" as causes or conditions of health and its opposite. Thus far in advance of his time he had still, however, to accept the world as he found it and to approach his patients and to address his pupils in recognition of the theocratic opinions and usages then prevailing, to treat the former and to instruct the latter in a temple dedicated to Asclepius, with whose priestly personnel he had to work in harmony. On this side of his professional activity much light has of late years been thrown by archaeologists, among whom, in the British Isles at least, no one has made more scholarly or more memorable investigations than the emeritus professor of physiology in the University of Liverpool, Dr. Richard Caton, sometime dean of faculty in that school. To his monographs on the "Medicine and Medicine God of the Egyptians" and on the "Temple and Ritual of Asclepius" he has now added another not less able and interesting on the "Health Temple at Cos." Delivered as a lecture on March 2nd at the Royal Institution, it brought vividly before the audience the scene of the life-work of Hippocrates and gave due credit to Mr. W. R. Paton and Mr. E. L. Hicks, authors of the "Inscriptions of Cos," for having fixed the site of the magnificent Cosan sanctuary and for having thus prepared the world for the supplementary investigations begun three years ago by Professor Rudolf Herzog of Tübingen and his coadjutors. To these accomplished and indefatigable archaeologists belongs the sole credit of bringing to light the remains of the long-vanished temple and precinct known as the "Asclepieion," or Health Temple, the disposition and architectural details of which occupied the remainder of Dr. Caton's lecture. An abstract of the lecture is published at p. 695 of our present issue, and we congratulate its author on the skill and the scholarship with which he has made so much technical and recondite matter available for the history of medicine. In the busy professional world there are not many who have the leisure or the qualifications requisite for such fascinating studies which to many minds represent, however regretfully, an "interest outworn." But

not even the "Dii majorum gentium," of modern medicine will grudge the applause due to the votary of those studies of whom it may be said—

"Victrix causa Dii placuit, sed victa Catoni!"

THE GENERAL MEDICAL COUNCIL.

A MEETING of the Executive Committee of the General Medical Council was held on Feb. 26th, Dr. Donald MacAlister, the President, being in the chair. There were present Sir Hugh R. Beavor, Sir John Batty Tuke, Sir Patrick Heron Watson, Sir Christopher J. Nixon, Sir William Thomson, Dr. P. H. Fye-Smith, Dr. A. H. Young, and Mr. C. S. Tomes. A considerable amount of routine business was done. The treasurers laid before the Executive Committee the receipts and expenditure of the Council and its branch councils, its committees, and dental fund for the year 1905, with an approximate statement of assets and liabilities upon the last day of that year. The assets and liabilities are very clearly set out and the general balance-sheet shows no very flourishing position. The effect of economical administration is obviously having influence, but as the Executive Committee at its meeting approved of the site committee taking steps for the enlargement of the council chamber by arranging "for the erection of an addition thereto on the part of the site vacated by the Council's tenants," the present position may not be long maintained. A table showing the results of the competitions in the Royal Army Medical Corps for the year was presented and has been referred to the General Medical Council for consideration. An application was heard from the Government of Nova Scotia that Part 2 of the Medical Act of 1886 might be applied to that province, and the Executive Committee held that the provisions of the revised statutes of Nova Scotia, 1900, with regard to the recognition of British qualifications afforded a just basis for medical reciprocity.

LAY SPECULATIONS ON PHYSIOLOGICAL QUESTIONS.

THE discussion of physiological questions, and more particularly of those which relate to the digestibility, assimilability, and virtues of foods, is very often a feature of conversation at dinner and is suggested in fact by the process of dining itself. A good deal of physiological nonsense on these occasions is volunteered; many of the statements made are based on hearsay, while if there happens to be present one who has some professional knowledge of the subject he is largely appealed to by those who exhibit a great concern as to their physiological requirements. Occasionally to the lay mind a knotty problem presents itself and it is highly amusing to listen to the many views which are expressed. Some views, it is true, are intelligent but that is not always the case, nor can it reasonably be expected. Our observations on this subject are prompted by a question put to us by a lay correspondent who evidently with others has had his soul vexed over a contention raised at a social gathering as to whether the human body weighs lighter or heavier after the partaking of a good meal. This is not the first time by any means that this question has been put to us and we have not the slightest doubt that it has been propounded to many a medical man by his patients. The answer is, of course, simple, for as a rule the weight of food ingested in a given time greatly exceeds the output during that time of waste products. Thus a man may consume for dinner a pound or two pounds of food in, say, an hour. In that time his average loss by the excretion of waste products would be about six ounces from all sources, so that during the time of the meal he would be adding to his weight by the weight of the dinner less the weight of the waste products excreted. The net gain in weight would therefore

be ten ounces if his dinner had originally weighed one pound, or one pound ten ounces if his dinner had weighed two pounds. But the waste products lost during the meal would be entirely due to respirable products which amount to about 50 per cent. of the whole output, so that the gain in the given time would be greater. Doubtless some confusion has arisen in the lay mind on this point from a consideration of the fact that taking the profit and loss on a day's account there is generally a slight gain in the case of a man who takes an abundant diet and at the same time rests, while in the case of a man who takes the same diet and leads an active out door life there is invariably a slight loss at the end. Food is, of course, put taken of at a quicker rate than it is resolved into metabolic products and for a short time there must be a gain in weight due to this food, but sooner or later this gain is lost by the excretion of waste products. A charge of coal pitched into the furnace necessarily adds for a while weight to the steam engine, but sooner or later this gain is lost as the coal is consumed and converted into oxidised or waste products.

FACIAL PARALYSIS AT THE AGE OF EIGHT MONTHS.

IN the *Archives of Pediatrics* for January Dr. J. H. W. Rhein has published a case of paralysis of the facial nerve at an unusually early age. A female infant, aged eight months, was taken to hospital on Oct. 3rd, 1905. The history was that she was in good health until Sept. 23rd, when she developed an abscess under the chin on the right side. This was incised on the 26th and on the following day the mother noticed that the child was unable to close the right eye and that the mouth was drawn to the left. On examination complete right-sided facial paralysis was found. Nothing else abnormal could be found in the nervous or other systems. The paralysed muscles gave the reaction of degeneration. Dr. Rhein thinks that the paralysis was due to extension of the inflammation to the nerve from the abscess. Facial paralysis is rare under the age of ten years. Sir William Gowers states that he has seen two cases in the second year of life. Sachs mentions a case of rheumatic facial paralysis in a child aged nine months. Henoch reports a case in a child, aged two years, due to pressure at the stylo-mastoid foramen by an abscess of the lymphatic glands of the neck.

THE INSTITUTE OF MEDICAL SCIENCES.

THE munificent gift of £10,000 by the Goldsmiths' Company to the University of London towards the fund for the Institute of Medical Sciences brings the realization of the policy of "concentration" perceptibly nearer. As is well known, the University has decided to establish, as soon as funds are available, a school of preliminary medical science, including anatomy and physiology, at South Kensington. Towards the building fund the contribution by the Goldsmiths' Company is a substantial assistance and raises the total sum promised or paid to more than one half of the sum with which it has been provisionally decided that it would be prudent to commence building operations. The delay, which has been inevitable considering the condition of the money market and the uneducated condition of possible donors with regard to the needs of medical education, cannot be regarded as altogether unfortunate. The idea of conducting the teaching of anatomy and physiology in institutions apart from hospitals, eminently desirable as it is from the point of view of hygiene, was a novel one to the majority of medical teachers in London and time was required to familiarise them with it. Whilst the teachers have been gradually appreciating the advantages of concentration from the point of view of efficiency and economy of teaching, the governors of the hospitals concerned have

not been slow to recognise the benefits which their patients would receive from the increased space rendered available for developments connected with the actual investigation and treatment of disease. A small experiment in concentration is already on its trial under the auspices of the University. Several medical schools are feeling the intolerable strain of providing an entire curriculum for their students and are earnestly looking forward to the fulfilment of the South Kensington scheme to enable them to develop the clinical and pathological side of their education. It is earnestly to be hoped in the best interests of medical education in London that the treasurers of the fund, Dr. J. Kingston Fowler and Mr. H. T. Butlin, may soon be enabled to announce that they have received sufficient support to allow them to claim a site at South Kensington and to begin the erection of the institute.

THE DISAPPEARANCE OF TYPHOID BACILLI FROM WATER AND SEWAGE.

THE importance of personal contact and of the contamination of food by means of dust or flies as factors in the dissemination of typhoid fever has almost withdrawn attention for the time from the question of polluted water-supplies, although the fact that many of the most destructive outbreaks have been thus brought about cannot be gainsaid. Yet the rapid disappearance of the bacilli from water or sewage which have been not only presumably contaminated but in which their presence had already been demonstrated is so remarkable that Emmerich was driven to doubt whether they ever retained their activity long enough to communicate the disease, and bacteriologists have generally contented themselves with adducing the presence of large numbers of bacilli coli as affording positive evidence of the actual pollution of the water by excrement and consequently of its possible specific infection. Thinking that the phenomenon might be explained by the abnormal conditions of cultivation in test-tubes or flasks, Jordan, Russell, and Zeit sought to reproduce quasi-normal conditions by inclosing their cultures in celloid in bags or porous earthen vessels suspended in wells and running streams but they were no more successful in the continuance of their cultivation beyond a few days. Fehrs¹ of the Hygienic Institute of Metz next took up the inquiry working under the direction of Professor Esmarch. Bolton had shown that, *ceteris paribus*, the growth of the bacilli was favoured by the presence of organic matter but Fehrs found that they lived longer in distilled water or water sterilised by boiling or filtration than in "raw" water, whether from river, wells, or the city mains, dying out soonest in the unfiltered water of the Moselle, while the theory of their being crowded out by other bacteria was easily disposed of. Emmerich had suggested the protozoa as the agents in their extinction and Fehrs, having excluded other causes, found little difficulty in verifying the hypothesis. In "raw" river water, abounding in protozoa, infusoria, and minute entomostraca, the bacillus typhosus disappeared with the greatest rapidity, from 10,000,000 to 20,000,000 or 25,000,000 per cubic centimetre vanishing within 48 hours, whereas in the same water after having been boiled the bacilli were living and increasing at the end of eight weeks. In some waters apparently free from protozoic organisms the bacilli died out in the course of a week or two, when it would be found that some of the flagellata that had escaped observation had subsequently multiplied and overpowered the bacilli. In the most successful cultures in sterilised water containing a sufficiency of organic matter, the introduction of a number of flagellata, especially *bodo salians* and *bodo ovatus*, was speedily followed by the disappearance of the bacilli, for

which it would seem that these protozoa have a preference, unless indeed the multiplication of the bacilli coli is too rapid for them to keep pace with. But the crowning demonstration in Fehrs's observation was when he had stained the bacilli and could clearly see them through the transparent body walls of the bodo. In the absence of these their natural enemies, as in the laboratory, they can be kept alive for several weeks, and from the mud from the bottom of a deep well Konradi was successful in obtaining cultures on the 542nd day. Though the bacillus coli is too prolific for the flagellata to keep down, the bacillus of paratyphoid fever, the cholera vibrio, and even the bacillus anthracis speedily yield to the attacks of the flagellata which are thus shown to play an important part in the economy of nature.

FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE executive committee of the forthcoming International Congress of Medicine, to be held at Lisbon from April 19th to 26th, has engaged a considerable number of rooms, some with one bed but the majority with more than one bed, at the price of six, eight, and ten francs per bed per diem respectively. There are also some rooms to be had inclusive of food, and so on, for 15 francs per diem per person. Tickets for these may be obtained at the Rocio station—viz., the terminus for passengers arriving at Lisbon by train—and during the sitting of the Congress. Moreover, visitors to the Congress will find every facility for meals at the various restaurants and hotels of Lisbon as well as at the official Congress restaurant. The lodgings will be distributed in the order in which they are asked for and all inquiries as to such must be sent before March 31st to Mr. Manoel José da Silva, Palácio Foz, Praça dos Restauradores, Lisbon. Arrangements have been made with the railway companies of France, Spain, and Portugal to allow members attending the Congress to return by a different route from that by which they arrived and a reduction of 50 per cent. on the usual fares will be made on condition that both the outgoing and the returning journeys are made by rail. The committee of the Congress has already begun to send out special tickets available on the lines of the three countries above mentioned, and moreover it has lately learned that the Italian railway companies are also willing to grant a reduction of 50 per cent. We are asked to state that a French pleasure yacht, the *Etoile*, has been chartered for the convenience of visitors to the Congress. She will sail from Marseilles on April 8th and will proceed to Malaga. Thence her passengers will make excursions to Granada and Cadiz where they will rejoin the yacht. She will then go to Seville whence passengers can visit Cordova. Rejoining the yacht at Seville the party will go on to Lisbon where during the Congress the yacht will serve as a hotel. After the Congress the yacht will return to Marseilles. The price for the whole trip, lasting 23 days, is 850 francs. Application must be made before March 15th to Dr. Helms, 10, Rue St. Petersbourg, Paris.

THE DIET IN EPILEPSY.

THAT diet has an important influence upon the symptoms of epilepsy has long been known. It is usually recommended that the diet of the epileptic should be as far as possible free from material which is difficult to digest, and that coffee, strong tea, and alcohol should be avoided. The French observers, Toulouze and Riche, have published favourable results obtained by them in epilepsy from a diet the essential feature of which is the absence of chloride of sodium. In combination with such a diet they have found the ordinary treatment by the bromides to be more efficacious. There is a widespread belief that meat in particular is harmful in epilepsy and its

¹ Hygienischer Rundschau February, 1906, original contribution.

strict limitation is advised by competent writers. In a paper in the *Journal of Nervous and Mental Disease* for December, 1905, Dr. A. J. Rosanoff of New York records the results of an inquiry made by him, which go to prove that the dietic factor of importance in the causation of the seizures and mental disturbances of epilepsy is not meat as such or any particular kind of food but the absolute quantity of proteid matter irrespective of its origin. Eleven patients suffering from long-standing epilepsy were kept for prolonged periods on five different diets, being confined to bed and receiving no medicine. The first observation was made with an ordinary mixed diet in which the amount of proteid was small, that of the carbohydrates large, and of the fats moderate. In the second case a vegetable diet was given which differed from the previous one only in the substitution of vegetable for animal proteid, the quantities of the proximate principles being practically the same in both. The results in these two instances were practically alike as regards the mental condition exhibited by the patients, the maintenance of weight, and the number of convulsions per week. So that the effect of a mixed diet in epilepsy does not differ from that of a vegetable diet containing the same quantities of proximate principles. In the third and fourth cases the features of the diet were respectively an insufficient and an excessive amount of proteids. In both cases the patients were restless and irritable and in both the number of convulsions per week rose in about equal degree. If, therefore, the amount of proteid is either above or below the indispensable minimum the severity of the disease is increased. In the fifth instance the diet contained a large excess of proteid and was very deficient in carbohydrates. The result was a general aggravation of the mental and physical disturbances exhibited by the patients who became dangerous, noisy, restless, and destructive, and mostly lost weight, whilst the convulsions greatly increased in number per week. This result is ascribed to the compulsory use by the organism of proteid in place of carbohydrate material. Carbohydrates and fats, it is pointed out, are, to a certain extent, capable of replacing proteids in the diet, and this with advantage in the case of the epileptic, who should therefore receive the largest amount of these principles that he can assimilate without inconvenience and the smallest amount of proteid which is compatible with the preservation of nitrogenous equilibrium, the nitrogen ingested not being allowed to fall below the nitrogen excreted.

Sir William H. Broadbent will be in the chair at a meeting to be held on Thursday, March 15th, at 8.30 P.M. at the Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W., at which Dr. H. Charlton Bastian will give a demonstration of his much debated biological work. The occasion will be a very interesting one. Dr. Bastian's demonstration will show certain heterogenetic processes (with the aid of lantern slides) in the following sequence: (1) the apparent *de novo* origin of bacteria; (2) the transformation of small masses of zoogloea into aggregates of flagellate monads or amœbæ, or else into brown fungus germs; and (3) the origin of different ciliated infusoria from the eggs of a rotifer. The demonstration will be followed by a discussion in which all interested in the subject are invited to take part.

THE annual clinical debate of the Chelsea Clinical Society will be held at the Chelsea Dispensary, Manor-street, London, S.W., on Tuesday next, March 13th, at 8.30 P.M., and will be continued on the following Tuesday at the same hour. Dr. R. T. Hewlett, Professor G. Sims Woodhead, Professor A. E. Wright, Dr. F. F. Caiger, Dr. Bertram Abrahams, and Dr. Allan Macfadyen are announced to take part in the debate. We cannot congratulate the society upon the accuracy with which the notices have been printed. Dr. Macfadyen's name

is mis-spelt and Professor Woodhead is called Professor Woodhouse.

THE twenty-third Annual Congress of the Royal Sanitary Institute will be held in Bristol from July 9th to 14th, 1906, when Sir Edward Fry has consented to act as President of the Congress, the following acting as Sectional Presidents:—Section I.: Sanitary Science and Preventive Medicine, Sir William J. Collins, M.D. Lond., M.P.; Section II.: Engineering and Architecture, Mr. Edwin T. Hall, V.P.R.I.B.A.; and Section III.: Physics, Chemistry, and Biology, Mr. W. N. Shaw, M.A., D.Sc., F.R.S. The Duchess of Beaufort will preside over the Ladies' Conference.

THE medical officer of health of the Cape Colony states that for the week ending Feb. 10th no case of plague in man or other animal occurred at any place throughout the Colony. As regards the Mauritius a telegram from the Governor received at the Colonial Office on March 3rd states that no cases of bubonic plague have occurred since Feb. 11th. As regards Hong-Kong, a telegram from the Governor received at the Colonial Office on March 5th states that for the week ending March 3rd there were 8 cases of plague and 7 deaths from the disease.

IN the analytical table of Sickness and Mortality Statistics in London during the year 1905 published in THE LANCET of March 3rd an error occurred in the figures of the deaths from principal infectious diseases owing to the accidental breaking of the type. Thus, the deaths from diphtheria, which should have read 546, appeared as 54, and the deaths from enteric fever, which should have read 234, appeared as 23.

A CONFERENCE will be held on Tuesday next, March 13th, at 8 P.M., at the Royal Sanitary Institute, Margaret street, London, W., when the following subject will be discussed: the Right Disposal of the Leisure of School Children in relation to Physical and Mental Health. Sir Lauder Brunton will take the chair and among the announced speakers are Dr. G. H. Savage and Dr. T. D. Adland.

THE annual festival dinner of the Irish Medical Schools' and Graduates' Association will be held on Saturday, March 17th (St. Patrick's Day), at 7.30 P.M., in the Grand Hall, Hotel Cecil, Strand. The guest of the association will be General Sir John French. Applications from members for tickets should be sent to Mr. E. Canny Ryall, honorary secretary, 85, Harley-street, London, W.

H.R.H. Princess Christlan has consented to patronise the performance of *Dandy Dick* by the "Strolling Players' Dramatic Club," to take place at St. George's Hall, Regent-street, London, W., at 8 P.M. on Tuesday, March 27th next, the proceeds being devoted to the special appeal fund of the Royal Waterloo Hospital, S.E.

FORMAL notices of appeal have been served against the decision of Mr. Fordham in fining two Holloway traders 20s., with £100 costs, each, for selling patent-still spirit as Irish and Scotch whisky respectively. The appeal, if proceeded with, will be to the North London sessions.

THE Queen will give sittings to Mr. George Wade for a statue, subscribed for by the governors and staff of the London Hospital. The statue is to celebrate Her Majesty's acceptance of the position of president of the hospital and also the completion of the rebuilding.

THE annual general meeting of the Medical Graduates' College and Polyclinic will be held at 22, Olden-street, London, W.C., on Friday, March 23rd, at 5 P.M., when Dr. C. Theodore Williams will take the chair.

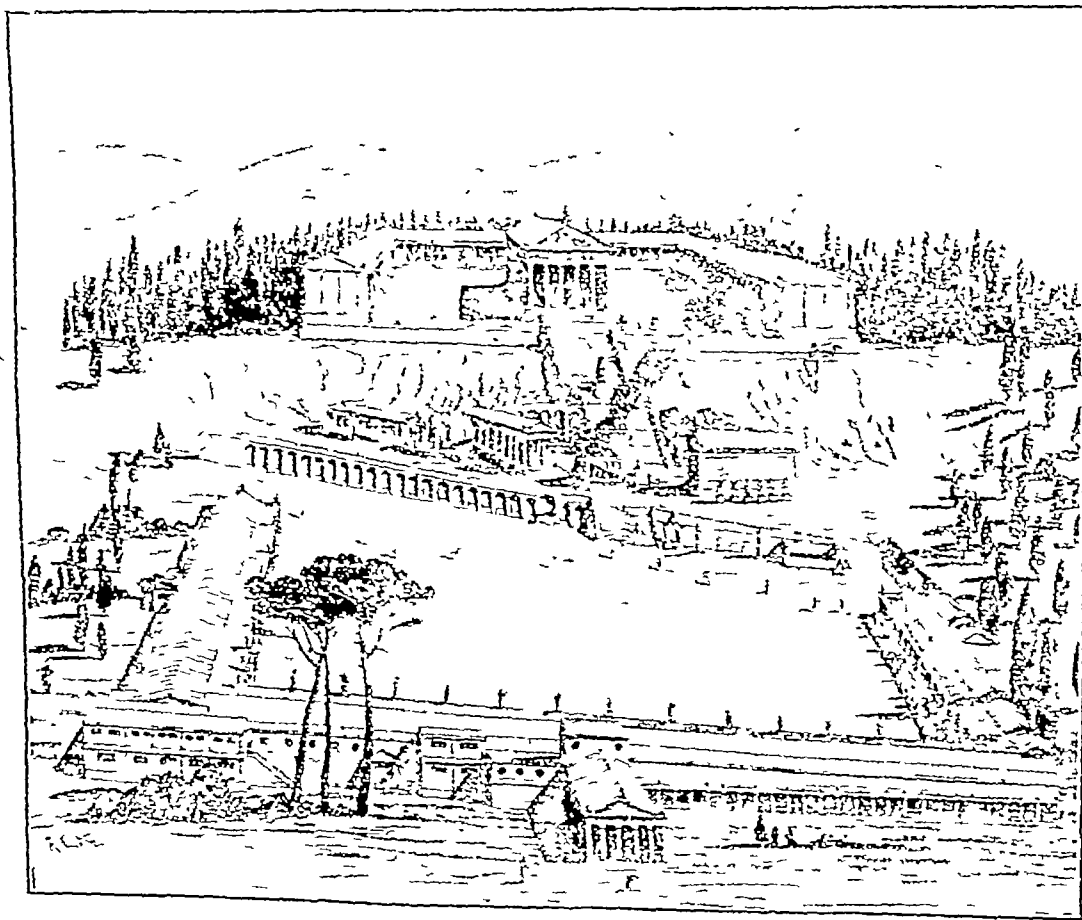
HIPPOCRATES AND THE NEWLY DISCOVERED HEALTH TEMPLE OF COS.¹

By RICHARD CATON, M.D. EDIN., F.R.C.P. LOND.

AFTER exhibiting three portraits of Hippocrates and giving a brief sketch of his work at Cos, his influence in freeing medicine from superstition, his marvellous powers of observation and scientific insight, and his lofty conception of the aims which ought to characterise the physician, Dr. Caton showed photographs of Cos and of the ancient tree under which, according to tradition, Hippocrates was accustomed to give medical advice and counsel to the people in the town of Cos. He then traced the Sacred Way which

slopes of the plain. Earthquakes with disturbance of the soil, the growth of vegetation, the evil deeds of the lime-burner, together with the building of various churches and mosques, had so completely masked the site that until three years ago not a living soul knew that the Panagia tes Tarsou with the gardens round it was the site of the famed Asklepieion. Two British archaeologists, Mr. W. R. Paton and Mr. E. L. Hicks, while searching Cos for inscriptions with much acuteness suggested this as a probable site. The situation is a remarkably beautiful one, commanding delightful views on all sides. Standing on three step-like terraces the buildings at present excavated extend for about 180 metres from north to south and about 129 from east to west. The spectator sees to the south the range of mountains I have mentioned. To the north the verdant plain of Cos with the white houses and trees of the town to the right, and the wide expanse of turquoise sea dotted by the purple islands of the Aegean and the dim mountains about Halicarnassus to the

FIG. 1.



Restoration of the Health Temple at Cos.

leads to the Asklepieion or Health Temple. Before describing the remains of this great Coan sanctuary which the labours of Dr. Rudolph Herzog of Tübingen have brought to light during the past two years, Dr. Caton briefly recounted the principal temples and sanitary departments included in such of the Greek Asklepieia as had previously been excavated.

The great Health Temple of Cos was situated two miles from the sea at an elevation of about 320 feet at a point where the range of mountains, which rises on the south coast of Cos to a height of about 2500 feet, springs from the gentle

slopes of the plain. Of course, little remains of the sacred precinct but foundations, but from these and the architectural fragments which remain it is not difficult to reconstruct in one's mind the *ensemble* of beautiful buildings which existed 2000 years ago.

The accompanying restoration (Fig. 1) will give some idea of the buildings grouped on three step-like terraces. In the foreground is seen a three-sided stoa or portico, having irregular buildings at a lower level adjacent to its outer border all round. This stoa is approached by a Doric propylæa or porch, within which there are signs of certain great tanks or basins and of an aqueduct supplying them. They were probably for the preliminary ceremonial ablutions. The Asklepiads were to be congratulated upon this usage.

¹ Abstract of a lecture delivered at the Royal Institution of Great Britain on March 2nd, 1935.

(Many of their successors would not be sorry if a preliminary cleansing or libation of soap and water were required from the votaries of the out-patient room in our modern Asklepieia!) The buildings adjacent to the left wing of this great stoa were occupied by an extensive series of baths, mostly reconstructed in Roman times. Here the hot and cold douches of which Hippocrates speaks, the frictions and affusions of water of various temperatures, the application of "smegma," a sort of hot semi-fluid soap, and the applications of sponge and strigil took place. Hippocrates believed greatly in the remedial uses of water, and here doubtless hundreds of his patients have submitted to the hydrotherapia of the time. Probably the remainder of these buildings on the north and west served as waiting rooms, consulting and operating rooms, the iatrium with its store of instruments of which Hippocrates speaks, including the scamnum or bench for reducing dislocations. Here probably would be the dispensary where were prepared the tisanes, the hellebore, the arsenic, the cantharides, and other drugs he names; also the library. Here may have been the rooms devoted to teaching, for Cos was a most important medical school. Here probably Hippocrates wrote his careful notes of cases, and probably kept the skeleton which he afterwards gave to the oracle of Delphi. Here also may have been the culinary department where the special diet to which the Cosan school gave so much attention was prepared, where probably the "cygeon" was made, that curious mixture of cheese, honey, and wine, which we first read of as being given by Circe to Ulysses, but which notwithstanding this highly suspicious origin, may have proved a nourishing form of food for certain of the sick. Here, perhaps, was the winestore for the Chian or the strong Cretan vintages which Hippocrates so rarely gave undiluted. He was a believer of the truth that much strong wine weakened rather than invigorated. At the south-west corner of the stoa were situated the sanitary arrangements of the precinct. The area enclosed by the stoa was probably a palaestra where the gymnastic part of the treatment was carried out. We know that Hippocrates was the pupil, not only of his father Heracleides the physician, but also of Herodicus who relied more upon exercise and gymnastics than upon any other treatment. Hippocrates tells us that he believes Herodicus killed some of his patients who had febrile or acute diseases by insisting on too violent exercise. While avoiding this error Hippocrates prescribed exercise largely in suitable cases. Could we transport ourselves backwards in time to the year 400 B.C. we might have seen in this palaestra various examples of his methods, the gouty man casting the discus, walking or running round and round the stoa, or going through the sword or spear exercise, grumbling meanwhile at the meagreness of his prescribed diet, or the weakly and ill-developed youth running, throwing the javelin, or engaging in gentle wrestling, drinking the "red water," and taking a full and highly nutritious diet. Within the portico were many inscribed wall slabs, some referring to the inviolability of the precinct, others bearing wise maxims in regard to health. If Dr. Ermerins is correct many of these existed prior to the time of Hippocrates and were quoted in his *Prophetica* and *Praenotiones*. Probably in later times many of his aphorisms were added to the number. We know that at the neighbouring Asklepieion of Onidos similar precepts, termed the "Onidian sentences," written by the physician Euryphon, were in like manner exposed to view. Votive tablets and the records of honours gained by Cosan physicians were also conspicuously placed here.

The south side of the quadrangle consisted of a lofty wall with buttresses supporting the second terrace. This wall was interrupted by a flight of steps leading up to the second terrace and by several drinking fountains, one in particular, the sacred spring, of which no doubt every patient was made to drink freely. Ascending the stairs to the middle terrace we find ourselves in the most ancient part of the precinct, in which the various buildings are arranged irregularly. Near the centre of the terrace stands the great altar, a structure measuring 12 metres by eight, approached by steps on its western side. In some respects it reminds the visitor of the great altar of Pergamon, though smaller. It is difficult to judge from the remains what its exact details of construction were but appears to have been surrounded by a colonnade. There was a close association between Cos and Alexandria and I confess to the hope that a shrine of Iemhotep, the Egyptian god of medicine, would have been found here (as there is reason to believe it has at Epidaurus), but none has as yet been discovered. Another link, however, connects

this altar with Alexandria. Herondas, the Alexandrian poet of the third century B.C., wrote eight "mime-iamics," comic dramatic poems, the scenes of which are all laid at Cos. The action of the fourth of these takes place in front of this altar. Two peasant women desire to offer a cock to Asklepios. During the sacrifice they chat with the pyrophorus or sacristan, who shows much enthusiasm on the subject of fees, and they comment on certain works of art—viz., a sacrificial procession by Apelles, and a figure of a small boy struggling with a goose, which are placed near the altar. Quantities of terra-cotta lamps and figurines were found round the altar.

To the west of the altar stands an Ionic prostyle temple, 16 metres in length and eight in breadth. Its dedication is unknown, but there is evidence from inscriptions that a temple of Apollo formerly existed here. Apollo being one of the greater gods would have his temple facing the east, and this temple is the only one in the whole precinct which has this orientation. The worship of Apollo which is thought to have taken place here was probably superseded by that of Asklepios in later times. So this may have become the Asklepieian shrine until the date when the great temple was erected on the upper terrace. It contains one curious feature: a stone cist or coffer composed of massive marble blocks forms a portion of the floor of the naos; it is about five feet long by four broad and is about three feet deep. The side blocks were connected by strong metal clamps. The weighty block forming the lid is placed in its centre by an aperture some six inches broad. Dr. Herzog thinks it is a *thesaurus* or treasury. But the difficulty of removing the massive cover (which has no rings or handles for such a purpose) would render it almost impossible to deposit or to remove such treasure. It is known that at every Asklepieion the sacred serpents were worshipped as the incarnation of the god. Being tame and harmless they were free to wander at will throughout the precinct. They probably were supplied with a den or hiding place to which they could retire and it would obviously be convenient if this den were adjacent to the small altar where sacrifices were offered to them and where they were fed with the sacrificial cakes or "popana" by their votaries. At Epidaurus a curious dark labyrinthine vault was provided beneath the Thymele or sacrificing place. This I believe to have been the Ophision or serpent house, from which the serpents emerged close to the altar when the sick came to sacrifice and to feed them. We know from a reference in the *Plutus* of Aristophanes that the serpents were accustomed to be summoned by the sound of a whistle. A somewhat similar structure on a smaller scale exists at the Athens Asklepieion. There are, however, other theories as to the explanation of these buildings but none can be said as yet to be proven. To me the above explanation seems the most probable. I think it likely that the temple on the west of the altar, after ceasing to be the special shrine of Asklepios, continued to be the Thymele or sacrificing place for the sacred serpents and this coffer in the floor was the Ophision or snake-house. Above or near it would stand a stone or bronze tripod altar on which the incense and other bloodless sacrifices would be offered. Here the sick would come accompanied by a priest to offer their sacrifice and feed the serpents with popana or sacrificial cakes. The accompanying sketch (Fig. 2) shows the roof of the coffer and what I conceive to have been its use. To the north of this temple stood a building divided into rooms, reconstructed in Roman times, which is thought to have been a house for the priests. Passing now to the east of the great altar we come to a Doric peripteral temple, the most ancient in the precinct. It measures 16 metres in length by ten in breadth, has six columns at each end, and nine on either side. It faces west. It is known that there were shrines of Hygeia, Aphrodite, Helios, Athena, the Fates, and Hesperia in the precinct; perhaps it was dedicated to one of these. To the north of this temple, adjacent to the great flight of steps, a lofty supporting wall was built against the face of the cliff. Between it and the peripteral temple is a large exedra or semicircular seat where the convalescents sat to enjoy the glorious view and the sweet sea and mountain breezes. On the east of the peripteral temple there remain a series of irregular foundations on which stood probably small temples and shelter porches, the latter of which would serve the same purpose as the exedra. No colonnades are found on this second terrace. Ascending the great flight of steps and passing on the way a large base which may have supported a colossal statue we reach the highest terrace and find facing us the great temple of Asklepios. This is a newer building, dating

from the latter years of the third, or beginning of the second, century B.C. It is peripteral Doric and measures 31 metres by 16. Six columns stand at each end and 11 on either side. The foundations are chiefly trachite but the temple and columns were marble. Each column was one and a quarter metres in diameter at the base. There remain traces of two groups of statuary. After the fall of the temple, probably in the earthquake of 554 A.D., a Byzantine chapel was constructed in the remains of the pronaos.

Little is known about the interior. A great figure of Asklepios would stand in the naos but it is not known what was its material. Some remains of a great marble serpent have been discovered. Great porticoes surrounded the temple on the east, south, and west, the whole structure measuring about 108 metres east and west and 70 north and south. It seems probable that the east and west wings of the stoa were abatoirs or sleeping places for the sick, like those at

and vast numbers of remains of inscriptions, into description of which limitations of space prevent my entering. No theatre or stadium existed at the Asklepieion, those adjacent to the town of Cos being employed at the time of the great festivals. The research thus far has proved extremely interesting and Dr. Herzog is to be congratulated on his learning and success as an excavator.

THIRTEENTH ANNUAL REPORT (FOR 1904) OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

III.

LITTLE less than half the volume issued by the health committee of the London County Council is occupied by its three appendices, each of which must be regarded as contributing to the subject of public health administration in the County of London. Detailed consideration of the important matters contained in these appendices has been precluded, for want of space, in our previous notices of the county medical officer's report, although the contents of these appendices have been frequently commented on by Sir Shirley F. Murphy as the several matters dealt with came under his review. In the present article we proceed to discuss some of the more important subjects treated of in this section of the health committee's report.

In THE LANCET of Jan. 21st, 1905, p. 170, we alluded to certain recent changes in the public health department of the London County Council—changes that had become necessary in consequence of the increased complexity of metropolitan government which had followed the assumption of educational responsibilities by the County Council. In the sanitary history of the metropolis the year 1904 will retain a prominent place, because in that year a direct administrative relationship was established between the public health and educational requirements of our vast community.

The medical supervision of school children is a measure of vital importance, both from the public health and from the educational point of view, for by this means alone can the conditions influencing the growth and development of the young be effectually ascertained and correctives applied for whatever physical deterioration is discovered among the infantile members of the community. The London County Council has come to recognise the intimate relation that subsists between the medical supervision of children whilst at school and their physical and mental prospects in after life. And for administrative purposes it has wisely combined its sanitary and educational functions in one comprehensive public health department. Preparatory steps have already been taken for the organisation, on the lines recommended by the Committee on Physical Deterioration of an anthropometric survey of the school children of the metropolis. In his carefully prepared report (see Appendix iii) Dr. James Kerr, the medical officer for education, has published figures showing the weights and heights of a portion of the school children under his supervision; he also gives account of the steps taken by his advice for promoting the cleanliness of children in attendance at school, as well as for limiting the spread amongst them of contagious, verminous, or infectious diseases. The thoroughly practical nature of Dr. Kerr's work may, perhaps, be best illustrated by briefly recounting the details of two particular cases in which, with the help of Dr. F. D. Berry and Dr. C. J. Thomas, he has investigated the causes of variation in the physique of scholars in attendance at school. In the case of one of these schools accommodating 400 pupils each boy was carefully weighed and measured, a note being made as to the condition of his teeth and as to his general cleanliness, as well as to the sufficiency or otherwise of his clothing—the latter as a basis for determining the home conditions, of parental neglect or of parental care. An estimate of mental capacity was in all cases added by the school teacher. Taking the state of clothing as the best available index of

FIG. 2.



Scene of Serpent Worship at Cos.

Epidaurus, one for male and the other for female patients. Here they reposed on their couches for the night (and some also during the day), hoping for illuminating nocturnal visions from the god, for visits from the sacred serpents, and for miraculous healing. Here the evening prayers were recited to the god, to whom gifts were presented on the tables and altars within the abatoirs, and all the occupants were encouraged by the priest to hope for succour from Asklepios and Hygieia. The abaton was a lofty colonnade freely open to the mountain breezes and much resembled the shelter balconies used in our modern sanatoriums. The mere exposure to a pure atmosphere was a most potent health giver. It is interesting to note that the idea of incubation close to a temple or church as a means of cure for the sick still exists at Tenos and other of the Greek Islands (vide the writings of Dr. W. H. Rouse). The sacred grove of cypresses surrounded the upper and middle terraces. Higher up in the hills were two remarkable springs. One, known as the fountain of Hippocrates, may, after the ascent, be approached by a short tunnel of Mycenaean architecture, at the end of which is a curious dome-like chamber with seat round its walls and a fountain in the centre. The second is the celebrated "red water" or chalybeate spring, used in cases of anaemia. Convalescents were encouraged to mount the hill and drink from one or other of these springs at its source. It is not yet decided whether any of the pannerus lines of earthenware pipe discovered near the Asklepieion conveyed these waters down to the various fountains and baths in the precinct.

Multitudes of works of art existed here in ancient times, but all have been stolen or destroyed. A celebrated statue of Asklepios the Great of bronze is recorded to have had a scolding grey mane in its rather rough hair. Many small fragments of sculpture of great merit have been discovered

relative poverty, the boys were classed in five groups according as the conditions varied from the very worst to the very best. The first group, containing 7 per cent. of the whole, consisted of children whose clothing was of the scantiest—e.g., consisting of a single ragged coat with practically nothing underneath it, the boots being either absent or replaced by a mass of rags tied about the feet. The second group, embracing 35 per cent. of the whole, consisted of children whose clothing was insufficient to sustain the body temperature, a state of things urgently requiring remedy. In the third group, consisting of 46 per cent. of the total, the children were poorly and often raggedly clad; the garments, however, were perhaps sufficiently warm, with some attempt at proper underclothing. The children in the fourth and fifth groups, constituting 12 per cent. of the entire school, were properly and sufficiently clad. As might have been expected, the 30 boys of the first (and worst) group failed to reach either the average weight or the average height; the 141 boys of the second group just attained the average, whilst the 49 well-clad boys of the last group exceeded the average with respect both to height and weight. Pursuing his examination of the same school Dr. Kerr finds that if want of cleanliness be taken as evidence of home neglect the proportions tabulated are equally instructive. Thus out of a total of 400 as many as 45 boys, constituting the worst group, were found to be verminous, and these were considerably below the school average both in weight and height. The 141 boys of the second group whose clothes and bodies were dirty but not verminous corresponded to the average in both respects, whilst the 48 clean boys of the last group were above the average height by as much as 1.7 centimetres. It is not claimed that the foregoing results show more than the general effect of poverty on physique, although the excessive shortage of weight in the worst-clad group indicates that insufficiency of clothing is a definite factor in producing malnutrition, the deficient food-energy being the first to fail in order to sustain the animal heat. From the same source we learn that, so far as can be gathered from this single experiment, no correlation can be established between mental capacity and bodily physique. For example, whilst on the one hand the boys of less than average intelligence corresponded to the average in weight and height, on the other hand, the boys whose intelligence exceeded the average showed a decided advantage in physique. But the exceptionally brilliant boys (10 per cent. of the whole) were actually below the normal for the school both in weight and height. Further pursuing the same investigation Dr. Kerr examined the effect of overcrowding on the physique of school children. Taking as a test the proportion of families living two, three, or more in a room he finds that it is at the extremes only that the pernicious effect of overcrowding can be demonstrated by the figures hitherto examined. But when the degree of overcrowding amounts to more than five persons in a single room its effects become startling. For the actual results, however, reference must be made to the report. It is interesting to note in passing that wherever the parents of school children are reported to have "come down in the world"—to have fallen from a higher social stratum—the children are actually of excellent physique compared with the "aboriginal denizens" of the neighbourhood.

In his second appendix Sir Shirley Murphy presents his own report, together with the reports of Dr. Frank Clowes and Dr. A. C. Houston on the relation of the eating of contaminated watercress to the spread of infectious disease. Within 50 miles of London it is estimated that more than 200 acres are under cultivation as watercress beds, the amount of this vegetable annually consumed as food in London probably exceeding 1500 tons. The undoubted fact that in certain well-known circumstances enteric fever may be caused by the ingestion of foul watercress has caused attention to be directed to the conditions under which the growth of *nasturtium officinale* is carried on for the supply of the metropolitan markets. By some it is stated that watercress cannot be grown profitably otherwise than in sewage-polluted water. This, however, is not the fact, for it is known that "brown cress," which is accounted the most wholesome and palatable, is the product of what Mr. Shirley Hibberd terms "the rills that flow cold and bright through pure and purifying chalk strata," whilst the dark-green or purple cress generally emanates from waters flowing through alluvial strata and therefore more likely to contain sewage. This so-called "sewage cress" does not thrive well unless the temperature

of the water in which it is grown exceeds 50° F. and therefore can only be produced in good condition during the summer months. It grows best at a temperature of about 60°. The best watercress is, however, grown in artesian well water which is not only free from contamination but is comparatively warm. The grower can therefore produce excellent artesian well cress in the early months of the year when the summer or sewage cress is not as yet ready for gathering. Prudent eaters of watercress will probably be thankful for this hint in making purchases from the London markets. The evidence obtained by Dr. Houston as the result of his bacteriological examination of watercress and of the water in which it was grown strikingly confirms that of Sir Shirley Murphy yielded by topographical inquiry. Dr. Houston found that four samples taken from beds the conditions of which as regards freedom from sewage pollution were apparently satisfactory, were ten million times purer (bacteriologically) than were samples from two beds that were most open to objection and at least one million times purer than were samples from three other beds in which the conditions were noted as unsatisfactory. He reports that danger to the consumer of unwashed watercress is enormously reduced by careful cleansing of the cress, but that even the greatest care devoted to the washing of cress from polluted sources does not always entirely free the plants from objectionable microbes. It is quite clear from the aforesaid inquiries that watercress of the best quality can be grown under conditions to which, from a hygienic point of view, no exception can be taken.

An able and instructive report on the use of ice for human consumption is the subject of another appendix to this report. It appears that in the year 1903, in consequence of communications received from Bermondsey, the London County Council referred to its medical officer for investigation the question as to the conditions under which the ice trade is carried on in the metropolis. Accordingly Dr. W. H. Hamer was instructed to inquire into this question, and his report, together with an introduction by Sir Shirley Murphy, was presented to the County Council in the course of 1904. Dr. Hamer's remarks on the development of the ice industry are interesting. Tracing the rapidly increasing use of ice in London both for consumption with food and for cold storage he says that the "ice habit" originally came to us from the United States. The Americans have a decided "passion" for iced water. Not only does it come up at every meal but even throughout the night it must be accessible, the habit being to place in the mouth of a jug a wedge of ice, so that thawing all night and dripping into the jug an ever-ready supply of water just above freezing point is at all times available. This passion for iced water has been attributed to the need which is universal in the United States for highly flavoured ice-cold drinks, a need which is accounted for on the ground that as alcoholic beverages are fast falling into disuse there and the sensation of taste consequently remaining ungratified the sensation of temperature forms the best available substitute. With respect to the importation of natural ice into this country, we learn that much of it used to come to us from America but that later a Norwegian lake near Drobak was laid under contribution and from there large quantities of ice were shipped to England under the name of "Wenham Lake ice." Dr. Hamer quotes from an annotation in THE LANCET of July 27th, 1901, p. 224, in which we stated that the greater part of the ice used at that time in London came from small lakes and ponds in Norway which are situated in such secluded sites as to render any contamination with animal matters highly improbable, and further that samples of the ice had been found by us to be pure, sparkling, and unlikely to cause mischief if used for drinking purposes. We, however, gave a word of caution with regard to the lead-dissolving powers of ice-water. The evidence as to causation of actual disease by the ingestion of impure ice is scanty, gastro-intestinal disturbances rather than definite enteric fever having so far been ascertained to follow its use. The amount of artificial ice manufactured in London from distilled water is rapidly increasing; and although between three and four hundred thousand tons of Norway ice still come to London every year, some thirty or forty thousand tons are manufactured here for home consumption. It is obviously in the manufacture of ice from distilled water that safety is to be found, and we hope that the time is not far distant when the sale of natural ice from polluted sources will be made a statutory offence against the public health.

METROPOLITAN HOSPITAL SUNDAY FUND.

ON March 2nd at the Mansion House the LORD MAYOR presided over a meeting of the Council of the Metropolitan Hospital Sunday Fund to consider the report of the committee of distribution on the increase of out-patients.

Among those present were the Archbishop of London, the Rev. Prebendary Ingram, the Rev. Brook Deedes, the Rev. E. H. Pearce, the Rev. C. H. Grundy, the Hon. Sydney Holland, Sir R. B. Martin, Mr. George H. Herring, Sir J. T. Ritchie, Sir William Church, Sir Dyce Duckworth, Mr. Thomas Bryant, Dr. J. G. Glover, and Mr. Wakley.

Sir EDMUND HAY CURRIE read the report of the committee of distribution as follows:—

The committee of distribution beg to submit the following report resulting from their inquiries respecting the increase in the number of out-patients at the various hospitals.

At a meeting held on July 27th, 1905, the following resolution was unanimously passed: "This committee is of opinion that the serious increase in the number of out-patients (many of whom have trivial complaints) is detrimental to the welfare of the hospital and patients, inasmuch as they are a burden to the funds of the hospitals and prevent the hospital staffs from giving the necessary attention to serious cases." A copy of this resolution was forwarded to 23 hospitals having out-patient departments inviting the opinions of their committees on the question and asking if there could suggest any remedy. Their replies have been received and their suggestions tabulated. It would seem from the reports furnished to the committee by the hospitals that the number of general out-patients is decreasing but the attendances at the special departments cause an increase in the actual figures. Subsequent meetings of the committee were held on Nov. 30th and Dec. 15th, 1905, and Jan. 11th and Feb. 15th, 1906. At the meeting on Dec. 15th a deputation was received from the East London Medical Society, who submitted a memorandum stating their views, to which the committee have given every consideration. Suggestions have been made to the committee that after the first visit patients should not be allowed to attend a second time without a certificate from a medical man in the neighbourhood that the case is a proper one for treatment at a hospital. The committee cannot see their way to agree to this proposition but they are of opinion that if such cases could be referred to a private practitioner or to a self-supporting dispensary (provided sufficient of these could be established) nothing but good would result, especially if the dispensaries were attended, not by a few medical men in the district, but by the whole of the general practitioners in the immediate neighbourhood, such dispensaries to be affiliated to the nearer general hospitals. The committee decided to make grants to "district nursing associations employing fully trained hospital nurses" (there are about 300 of them engaged throughout the metropolitan area), and as these nurses work only under the direction of local medical men the committee are of opinion that some sort of affiliation should be made and that casualty patients might be recommended to apply to the superintendents of these associations after receiving "first aid" at the hospital and thus come under the professional care of the local medical men.

The committee are of opinion (a) that notwithstanding the large number of attendances in the out-patient departments of the general hospitals the hospitals have hitherto increased their accommodation and qualified staffs to an extent sufficient to enable them to cope with all such cases. (b) That there is not any serious abuse of the out-patient departments in the general hospitals and that any which may exist at the present time can be effectually met by an efficient system of investigation, conducted by a competent staff in the out-patient department, who should visit the homes of the patients and for that purpose the addresses of all out-patients should be taken. The committee has considered it advisable to confine its investigation to the general hospitals only and not to the special ones.

Feb. 22nd, 1906. (Signed) W. S. CHURCH, Chairman.

Sir WILLIAM CHURCH moved that the report be adopted, circulated among all the hospitals, and sent to the press.

The Rev. C. H. GUNDRY seconded. He said that there was no doubt that great abuse of the out-patient departments of hospitals existed and suggested that a small fee should be charged to patients attending general hospitals.

Dr. GLOVER said that though there was a creditable effort on the part of the hospitals to reduce the numbers of the out-patient department it was still much abused. One hospital alone, the Hospital for Women, Soho, had reduced the attendances in the out-patient department from 32,150 in 1897 to 16,556 in 1904. He had never believed much in the triviality of the diseases. They must be careful not to push that idea too far. For even a trivial ailment or accident tended to impair the working value of a poor man or woman. The abuse could only be corrected by organised co-operation with medical men, with the help of the clergy, and the nurses of the poor. The subscribers to hospitals, too, should realise their responsibility to investigate the fitness of patients sent. He felt sure that the public would give more generously to the hospitals if the authorities would take pains to mitigate this great evil and to reserve hospitals more severely for the relief of fit cases.

Mr. BRYANT asked the chairman of the committee if any

inquiry had been made as to the value of the scheme which had been worked out for in-patients and out-patients at Bellingbroke Hospital, Wandsworth Common, and had proved so highly satisfactory. He had been surgeon to the hospital for 15 years and could say that during that period everything had worked smoothly and that there had been no friction with any of the medical men of the district or trouble with any one. Indeed, he looked upon the system there established as an object lesson worthy of imitation by all hospitals of moderate dimensions, London or provincial. The system was introduced originally by Mr. Cecil R. C. Lyster, when house surgeon, and is now well established. Mr. Bryant then went on to describe the system.

Sir WILLIAM CHURCH and Sir DYCE DUCKWORTH argued that there was little abuse of the out-patient department, the latter stating that he acted as physician to the out-patient department for 14 years in St. Bartholomew's Hospital and that he had only detected three cases of abuse.

The Hon. SYDNEY HOLLAND denied that the out-patients' departments were abused. All the talk about abuse of hospitals came from people who were not connected with them.

The report was subsequently adopted.

On the motion of Sir R. B. MARTIN it was decided to call a special meeting of the constituents of the Fund for March 20th, at 2.45 P.M., to consider the following:—

That inasmuch as there is no definite constitution of the Fund and to obviate difficulties arising in future the council be authorised to take such steps as it thinks fit for the incorporation of the Fund by Royal charter or otherwise.

BRITISH MEDICAL BENEVOLENT FUND.

THE monthly meeting of the committee of this Fund was held on Feb. 20th. 16 applications were considered and sums amounting to £148 10s. were voted in relief, one case being postponed for further inquiry. Two vacant annuities of the value of £20 each were filled by the election of suitable candidates.

Dr. J. Michell Clarke of Bristol and Mr. W. G. Spencer of the Westminster Hospital resigned the office of honorary local secretaries, and Mr. E. H. Buckell and Dr. James Allan were appointed for Chichester and Leeds respectively.

At the annual general meeting of subscribers to the Fund, held on the same day, the treasurer's financial statement for 1905 and the report of the committee were received. These showed that £2453 13s. 4d. had been distributed in annuities and £1492 in grants during the year, a total of 263 persons having received relief. Two additional annuities had been created, making 123 in all. An appeal had been sent at the expense of a member of the committee to every practitioner in London and, by the courtesy of the officers of the British Medical Association, to all its branch and divisional secretaries. Encouraging replies had been received and altogether 26 new honorary local secretaries had been appointed during the year.

The financial statement and the report having been adopted the committee and the officers of the Fund were re-elected, and Sir Thomas Barlow, Bart., Sir Victor Horsley, F.R.S., Mr. H. T. Batlin, and Mr. G. Cooper Franklin (President of the British Medical Association), were elected vice-presidents.

A very cordial vote of thanks was passed to the medical press for their assistance during the year and especially to the Editors of THE LANCET and to the officers of the British Medical Association.

Abstract of Cases Relieved at the February Meeting.

1. M.R.C.S., L.S.A., aged 65 years, who practised in a Kentish town for 40 years. Is hemiplegic and quite helpless, requiring constant attention. Only income £20 a year from the East Medical Benevolent Fund. Relieved once, £12. Recommended by Dr. F. Hinds. Voted £12 in 12 monthly instalments.
2. Daughter, aged 54 years, of late M.R.C.S., L.S.A. No income; tries to support herself by sewing. Indifferent health. Mother was an annuitant of this Fund. Recommended by Dr. Ernest Verins, honorary local secretary. Voted £12 in 12 monthly instalments.
3. Daughter, aged 49 years, of late M.R.C.S., L.S.A. No income; receives £25 a year for doing home mission work. Mother was an annuitant of this Fund. Recommended by Dr. A. Garrod Thomas. Voted £10 in two instalments at intervals of six months.
4. Widow, aged 42 years, of L.R.C.P., L.R.C.S. Irel. Left very insufficiently provided for at husband's sudden death six months ago. Three children, aged 14 to six years. Is endeavouring to add to her small income by letting lodgings. Recommended by Dr. Henry Gerrard.

Voted £10 10s., to be paid through a fund which is being locally collected to be invested for the benefit of applicant and her children.

5. L.R.C.P., L.R.C.S. Edin., aged 33 years. Four children, aged ten to three years. Supports himself by acting as locum tenens but finds great difficulty in getting work at this time of the year. Recommended by Mr. William Davidson. Voted £5.

6. Widow, aged 57 years, of M.R.C.S. Eng. Only certain income £5 a year; lost small capital since husband's death nine years ago, by attempting to keep a boarding-house; now lets lodgings. Children unable to help. Recommended by Sir Samuel Wilks, Vice-President. Voted £12 in 12 instalments.

7. Widow, aged 44 years, of L.R.C.P. (Ireland), L.S.A., who was obliged to give up practice three years ago and has quite recently died from phthisis. Three children, aged 15 to 11 years. Only means of support the rent of a small house and the interest of a life policy for £200. Recommended by Dr. Percy Kidd. Voted £10 in one sum.

8. L.R.C.S., L.S.A., aged 78 years, who is bedridden from hemiplegia and senile gangrene. Is an annuitant of this Fund and of Epsom College. Voted £5 as a special grant with leave to apply again in three months if necessary.

9. Widow, aged 56 years, of L.S.A. Practically unprovided for at husband's death a few years ago and endeavours to maintain herself by taking lodgers. Five children, one dependent, and the others barely self-supporting. Relieved four times—£48. Recommended by Dr. W. S. A. Griffith. Voted £12 in 12 instalments.

10. Daughter, aged 63 years, of late L.S.A. Only income a small Government annuity purchased with applicant's savings. Health indifferent. Relieved five times—£35. Recommended by Dr. E. G. Barnes. Voted £5 in one sum.

11. Widow, aged 40 years, of M.D. R.U.I. Quite unprovided for at husband's death six years ago. Acts as housekeeper in exchange for a home for herself and her boy, aged seven years, but receives no salary. Relieved seven times, £33. Recommended by Dr. J. Mitchell Bruce. Voted £12 in 12 monthly instalments.

12. Daughter, aged 38 years, of late M.D. Glasg. No income; tries to support herself by playing at dances, &c. Relieved three times, £17. Recommended by Dr. A. W. Orwin. Voted £5 in one sum.

13. Widow, aged 75 years, of L.R.C.S., L.S.A. No income; slight help from children. Relieved ten times, £70. Recommended by Dr. P. H. Pye-Smith, vice-president. Voted £8 in 12 instalments.

14. Widow, aged 58 years, of L.R.C.P., L.M. Glasg. No income. No children. Lets lodgings. Relieved four times, £40. Recommended by Dr. D. Yellowlees. Voted £10 in ten instalments.

15. Daughter, aged 50 years, of late L.R.C.P. Edin. After being employed by a firm of dressmakers for 22 years invested small savings in a business which proved unsuccessful. Is promised 10s. a week by a friend and earns a little by needlework when able to obtain it. Relieved once, £10. Recommended by Dr. A. Godson. Voted £10 in two instalments.

MEDICINE AND THE LAW.

Medical Aid as a Necessary in the Legal Sense.

IN another column will be found mentioned an action brought by a dentist in the Taunton county court to recover £5 from a farmer in respect of professional services rendered to his wife. As a husband is liable for debts contracted by his wife in respect of necessities for her use the question had to be argued whether false teeth, the supply of which formed an important item in the account, were necessities. The county court judge decided that they were and judgment was given for the plaintiff with costs. The question of necessities or not necessities arises, it will be remembered, not only in the case of married women, but frequently also where goods are supplied to minors who plead their infancy as a defence. The subject of the claim must then be shown to be a necessary, taking into consideration the circumstances of the case—that is to say, allowance must be made for the rank and station of the person to whom the alleged necessities were supplied. The farmer's wife in the case referred to presumably was supplied with teeth at a rate and under conditions suitable to her condition. It does not, of course, follow that if she had taken a journey to London and placed herself in the hands of one of the leaders of the dental profession accustomed to charge high fees to patients well able to afford them he would have been able to satisfy the judge that she was entitled to his assistance at his usual rates as a necessary. Similarly a medical man called upon to treat a minor will do well to bear in mind that it is only such attendance as may be necessary, taking into consideration his rank and station, for which he can be compelled to pay should he desire to escape from the obligation to do so.

The Pollution of Oyster Beds by Sewage.

Mr. Justice Buckley, sitting as an additional judge in the King's Bench Division, after a protracted hearing has delivered a considered judgment in an interesting action brought by Mr. A. J. Hobart, trading as George H. Hammond, against the corporation of Southend-on-Sea in respect of the alleged pollution of his oyster beds in Hadleigh Ray, near Southend, with sewage discharged by the defendants, untreated, into the estuary of the Thames. Such a case as this must always be considered to be *sub judice* pending the appeal or appeals

which almost inevitably follow, and it may have been noticed that on this ground the President of the Local Government Board passed over without comment the question of Southend and its sewage in replying to a question in the House of Commons.¹ It is enough, therefore, to state with regard to the facts alleged that Mr. Justice Buckley, after going through the evidence as to these in a judgment² which is well worth reading by those interested in the subjects of sewage disposal and of the public health, found that the Southend sewage did find its way to the plaintiff's oyster beds to their detriment and to add that the evidence and arguments of the defence were directed to proving that the pollution, if any, was due not to Southend sewage but to sewage matter entering the river at other places and from other sources. The following points of law were raised by the defendants. They argued that even though the fact of pollution might be found against them they were entitled to discharge their sewage as they did, firstly, because they had a common-law right to do so; and secondly, because they had a statutory right to do so. Upon both points the learned judge was against them, holding upon the first that the plaintiff was entitled to the enjoyment of a "several fishery," and that he had a right to use the land for the laying of his oysters there with which the defendants interfered by allowing their sewage to be discharged in such a way as to reach his land. From an old judgment (Tenant v. Goldwin, 1 Salkeld 21, 361) he cited a passage as applicable to the case before him: "It was the defendant's wall and the defendant's filth and he was bound of common right to keep his wall so as his filth might not damnify his neighbour, and it was a trespass on his neighbour as if his beasts should escape, or one should make a great heap upon his ground and it should tumble and roll down upon his neighbour's." Upon the second point the Southend corporation contended that if they had no common-law right to discharge their sewage as they did they had a right by statute arising out of Section 49 of the Public Health Act, 1848, under which the owner of a house situated within 100 yards of the sea might be called upon to construct a drain into the sea. From this they sought to infer that there must be a right to drain into the sea. The Act of 1848, however, was repealed by the Public Health Act, 1875, which re-enacted the substance of the section referred to but omitted the portion relating to drainage into the sea and also provided that the exercise of any powers given must not be conducted so as to create a nuisance. His lordship held that the argument based upon the Act of 1848 was thus displaced and in further corroboration of his view that the law did not protect the corporation he referred to the Sea Fisheries Act, 1868, Sections 51 and 53, which impose penalties upon anyone "knowingly" disturbing an oyster bed, which he pointed out the corporation would now do if it continued its practice, whatever want of knowledge there might have been before, and to the Sea Fisheries Act, 1888, under which by-laws can be made by local fishery committees and in fact had been made by the Kent and Essex Sea Fisheries Committee, with the sanction of the Board of Trade, which by-laws forbade that which the defendants had done. He also pointed out that no local Act or provisional order confirmed by Parliament gave the Southend corporation any powers to discharge its sewage. A claim of prescriptive right had been pleaded but had been abandoned during the hearing of the case, and with regard to this Mr. Justice Buckley observed that if this claim had been maintained it might still have been possible by discharging sewage only at suitable times with reference to the tides to enjoy such a right without polluting the plaintiff's oyster beds and that consequently it had not been shown that the injunction against the continuance of the pollution would interfere with any right derived from prescription. In conclusion he assessed the damages at £1500 and gave judgment for that amount with costs, granting also an injunction to restrain the defendants as asked for in the claim but limiting the time of it to the duration of the plaintiff's lease of his oyster beds at Hadleigh Ray.

Cases of Manslaughter or of Concealment of Birth.

In two cases tried at the recent assizes at Lincoln attention was called to an essential factor in the charge of concealment of birth which is likely to escape the observation of those not versed in the criminal law. An indictable

¹ THE LANCET, March 3rd, p. 634.
² See The Times, Feb. 22nd, p. 3.

offence is committed if any woman is delivered of a child by "every person who shall by any secret disposition of the dead body of the said child, whether such child died before, at, or after its birth, endeavour to conceal the birth thereof." In the two cases referred to the children had been secretly abandoned by their mothers when alive and in one of these there had been a conviction before the judge's attention was called to the fact that the child was not dead when concealment was attempted. The mother who throws her child alive down a privy or abandons it in such circumstances that death naturally follows may lay herself open to a charge of murder or of manslaughter but does not, strictly speaking, commit the offence known as concealment of birth. She may, however, be indicted for murder and the jury, while acquitting her upon the capital charge, may convict her of concealment of the body of her dead child "in case it shall so appear by the evidence." In cases of this class there is a tendency, due to sympathy with the suffering which the mother has often gone through, to acquit her of the more serious offence and to find a merciful verdict, perhaps not altogether justified by the evidence, and similarly she may, through the clemency of the magistrate, be committed for trial for the lighter offence only, and if the evidence at her trial fails to establish this acquittal is the result.

A Cruel Libel on a Medical Man.

A man named Foxlee has been found guilty of a libel, or rather a series of libels, of a malignant and disgusting character upon Dr. A. R. Waddell of Potter's Bar. Dr. Waddell's case was successfully undertaken by the Medical Defence Union. There were circumstances of professional interest attending the case which will make a further reference to it interesting.

ASYLUM REPORTS.

Royal Asylum of Montrose (Report for the Year ending May 15th, 1905).—From the report of Dr. John G. Havelock, the physician superintendent, it appears that the daily average number resident in this institution throughout the year reported on was 635. The cases admitted numbered 146, of which 110 were new ones; the discharges 85, of whom 61 left recovered (or 41·78 per cent. of the admissions including transfers) and 18 relieved; the deaths 71 (or 10·36 of the daily average resident). At the close of the year there were 630 in residence, of whom 132 were private patients, the remainder being chargeable to parishes in various parts of Scotland, some amongst them to remote parts such as Caithness and Shetland. Amongst causes of insanity in the admissions old age heads the list with 21 cases, alcoholic intemperance being next with 11. In seven cases the cause was apparently religious excitement and these it is thought may have succumbed to the influence of the "church crisis" in Scotland, or may have been the victims of "the revival movement," from which we gather that unusual religious influences have possibly been at work in Scotland of late, though scarcely probably to the extent that has obtained in Wales. Two patients were stated, by their friends it would seem, to have succumbed to a disorder called "motor-mania," a condition said to be induced by the strain of driving mechanically-propelled vehicles. We do not remember to have heard of it before and are content to await further experience before accepting an addition to the dangers already associated with the pursuit of motoring. Hereditary influences, direct or collateral, were ascertained in the extremely low proportion of nine cases out of 146 admissions, notwithstanding that at Montrose, according to the report, more exact information as to causation is possibly obtainable than is the case with institutions serving large urban districts: "In a country parish the complete history of the patient is commonly known even the family history for a generation back." The great majority of the cases admitted were varieties of mania and melancholia. Two villas are in use, one for each sex, and this plan is found most suitable here as at other asylums. In the first of the two reports of the Commissioners in Lunacy it is noted that female nurses have been placed in charge of the male Commissioners. It is further mentioned that new cases are now admitted to, and treated in, a separate hospital ward, an arrangement which is expected to favour the early recovery of the curable. Both reports of the Commissioners

in Lunacy refer in favourable terms to the condition of the asylum.

Staffordshire County Asylum, Cheddleton, near Leek (Report for the Year 1904-05).—Although this asylum was only opened six years ago the accommodation is to be increased to the extent of 400 beds. From the report of Dr. W. F. Menzies, the medical superintendent, it appears that the admissions for 1904 numbered 205; 86 patients were discharged recovered (the high proportion of 42·4 per cent. of the admissions), and 85 died (12·54 per cent. of the average daily number resident, a figure appreciably higher than the average for county and borough asylums, and we observe in Table III. of the statistical tables that this figure has been as high or higher since 1900). Of the patients admitted no less than 122 were regarded as irrecoverable. As regards causation, alcohol or syphilis, acquired or inherited, was a determining factor in 112 of the admissions, being a percentage of 55·4 on the total admissions. Heredity of insanity was found in 60 out of 163 cases in which a history was obtained. General paralysis accounted for 20 per cent. of the deaths and tuberculosis for 16·2 per cent., the latter figure comparing favourably with that for asylums of similar size as given in the Blue-book. 16 of the admissions were found to be suffering from pulmonary tuberculosis on reception. Such cases are sent directly to special wards, an example which is worthy of being followed in all asylums. Dr. Menzies observes that the recent experience of the institution seems to strengthen the view that a large proportion of asylum tuberculosis is present on admission of the patients but in too early a stage to be suspected. He considers that "those who have for some years advocated the maintenance of an artificially high temperature in asylum wards have been helping to promote the spread of tubercle." In regard to diarrhoea and dysentery Dr. Menzies's experience supports the supposition that most asylum epidemics arise from a very small number of unrecognised chronic cases.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8530 births and 5288 deaths were registered during the week ending March 3rd. The annual rate of mortality in these towns, which had been 15·2, 17·2, and 17·3 per 1000 in the three preceding weeks, further rose to 17·4 per 1000 last week. In London the death-rate was 16·6 per 1000, while it averaged 17·8 in the 75 other large towns. The lowest death-rates in these towns were 8·9 in Northampton, 9·7 in Wallasey, 10·5 in Newport (Mon.), 10·8 in King's Norton, 11·4 in Handsworth (Staffs.), and 11·6 in East Ham; the highest rates were 22·2 in Liverpool and in Blackburn, 22·4 in Gateshead, 23·3 in Warrington, 23·5 in Stockport, 23·7 in Merthyr Tydfil, 24·9 in Bury, 25·8 in Nottingham, and 27·7 in Bournemouth. The 5288 deaths in these towns last week included 420 which were referred to the principal infectious diseases, against 400, 446, and 388 in the three preceding weeks; of these 420 deaths, 133 resulted from measles, 130 from whooping-cough, 67 from diphtheria, 42 from diarrhoea, 35 from scarlet fever, and 13 from "fever" (principally enteric), but not any from small-pox. No deaths from any of the principal infectious diseases were registered last week in Northampton, Ipswich, Norwich, Burton-on-Trent, Coventry, Boodle, Wigan, Rochdale, Barrow-in-Furness, Tynemouth, or Newport (Mon.); while they caused the highest death-rates in Bournemouth, Reading, Liverpool, Bury, Preston, Huddersfield, Leeds, York, and West Hartlepool. The greatest proportional mortality from measles occurred in Hornsey, Tottenham, Liverpool, Bury, Blackburn, Preston, and Leeds; from scarlet fever in West Hartlepool; from diphtheria in Huddersfield and Merthyr Tydfil; and from whooping-cough in Brighton, Bournemouth, Southampton, Reading, Birmingham, Leicester, York, West Hartlepool, Gateshead, and Rhondda. The mortality from "fever" and from diarrhoea showed no marked excess in any of the large towns. No deaths from small-pox were registered last week in any of the 76 towns. There were six small-pox cases under treatment in the Metropolitan Asylums Hospitals at the end of last week, against two and five at the end of the two preceding weeks; one new case was admitted during the week, against two and three in the two preceding weeks. The

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·5, 19·0, and 24·4 per 1000 in the three preceding weeks, further rose to 24·8 per 1000 during the week ending March 3rd. During the past four weeks the death-rate has averaged 22·2 per 1000, the rate during the same period being 16·5 per 1000 both in London and in Edinburgh. The 180 deaths of persons belonging to Dublin registered during the week under notice were three in excess of the number in the preceding week and included six which were referred to the principal infectious diseases, against one, one, and six in the three preceding weeks; of these, four resulted from whooping-cough, one from "fever," and one from diarrhoea, but not any from small-pox, measles, scarlet fever, or diphtheria. These six deaths were equal to an annual rate of 0·8 per 1000, the death-rates last week from the principal infectious diseases being 1·4 in London and 0·9 in Edinburgh. The 180 deaths in Dublin last week included 22 of children under one year of age and 55 of persons aged 60 years and upwards; the deaths of infants showed a decline, while those of elderly persons slightly exceeded the number in the preceding week. Nine inquest cases and ten deaths from violence were registered; and 61, or more than a third, of the deaths occurred in public institutions. The causes of four, or more than 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. J. Walsh to the *Blenheim*, on recommissioning; E. R. D. Fasken to the *Impacable*; and J. Jenkins to the *Hood*. Staff Surgeons: R. D. Jameson to the *Lancaster*, on recommissioning; G. T. Bishop and R. F. Clark to the *President*, additional for three months' course at the West London Hospital. Surgeons: W. C. B. Smith to the *Lancaster*, on recommissioning, and H. V. Wells to the *Eolipse*.

ROYAL HORSE GUARDS.

Surgeon-Captain Basil Pares, from 1st Life Guards, to be Surgeon-Major, vice Surgeon-Lieutenant-Colonel H. Rayner, retired (dated Feb. 17th, 1906).

ROYAL ARMY MEDICAL CORPS.

Lieutenant A. O. Osburn is appointed to the Station Hospital, Leborg, for duty. Major C. R. Elliott, Sanitary Officer, Western Command, is directed to proceed to Karachi and Quetta in connexion with proposals for accommodation, &c., connected with the Redistribution Scheme. Colonel O. E. P. Lloyd, V.C., Administrative Medical Officer of the 5th Division, at Dover Headquarters, is ordered to India, where he will fill a similar appointment at Mhow.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel George Middlemiss having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated March 3rd, 1906). Surgeon-Major Charles N. Lee to be Surgeon-Lieutenant-Colonel (dated Feb. 14th, 1906). Surgeon-Major Francis J. L. Warwick, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated March 3rd, 1906). Surgeon-Captain Campbell Boyd to be Surgeon-Major (dated Feb. 24th, 1906).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Captain and Honorary Major (Honorary Captain in the Army) J. T. Simpson to be Major (dated Jan. 13th, 1906).
 Captain (Honorary Captain in the Army) A. H. Benson is granted the honorary rank of Major (dated Feb. 2nd, 1906).

IMPERIAL YEOMANRY.

West Somerset: Surgeon-Lieutenant O. Farrant to be Surgeon-Captain (dated March 3rd, 1906).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Forfarshire: Surgeon-Lieutenant-Colonel W. Chalmers-Cowan is granted the honorary rank of Surgeon-Colonel (dated March 3rd, 1906).

Royal Engineers (Volunteers): The Tyne Division (Submarine Miners): Surgeon-Major F. W. Gibbon is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated March 3rd, 1906).

Rifle: The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): Laurence William Pole to be Surgeon-Lieutenant (dated March 3rd, 1906). 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Lieutenant W. P. Simpson resigns his commission (dated March 3rd, 1906). 2nd (Earl of Chester's) Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant A. MacLennan to be Surgeon-Captain (dated March 3rd, 1906). 2nd London Volunteer Rifle Corps: Surgeon-Captain S. A. M. Copeman to be Surgeon-Major (dated Feb. 12th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).
Companies: 112000

ROYAL ARMY MEDICAL CORPS (VOLUNTARY).
*Scottish Command: Glasgow Companies: Lieutenant G.
 Gordon to be Captain (dated March 3rd, 1906).*
 MEDICAL SERVICES.

DEATHS IN THE SERVICES.

DEATHS IN THE SERVICES.
Thomas Edmondston Charles, M.D., LL.D. Edin., F.R.O.P. Lond., Deputy Surgeon-General I.M.S. (retired), Honorary Physician to His Majesty the King, at his residence, Cliff Cottage, Flushing, near Falmouth, on March 2nd. He was the son of the late Rev. Dr. Charles of Kirkcowan and was born at Calcutta where his father was chaplain for the Church of Scotland. He received his medical education at the University of Edinburgh and after graduating entered the Indian Medical Service. Proceeding to India in 1857, he passed through the Indian Mutiny, taking part in the

notable forced march from Dughai to Delhi. On his retirement he took up private practice at Calcutta. He retired from the service with the rank of deputy surgeon-general.

Henry Carden Herbert, M.D. Glasg., F.R.C.S. Irel., L.R.O.P. Edin., Deputy Surgeon-General, A.M.S. (retired), at his residence, 6, Elliot-terrace, Plymouth, on March 2nd, in his seventy-third year. The deceased was born in county Kerry, Ireland, and entered the army as assistant surgeon in February, 1857, being attached to the 45th Regiment. He became surgeon in May, 1872, surgeon-major in March, 1873, and brigade-surgeon in December, 1882, retiring with the rank of deputy surgeon-general in March, 1888. The deceased had no war service but was stationed for several years in Canada, St. Helena, and the Cape. He was in charge of the station hospital, Devonport, in 1880 for some time and subsequently held an appointment at the Horfield Depot, Bristol. After his retirement he resided at Plymouth, where he was well known and highly respected.

THE NAVY ESTIMATES.

The Estimates for 1906-07, which have just been issued, show that a sum of £275,000 is provided for medical establishment and services. The amount for 1905-06 was £277,500.

THE ARMY ESTIMATES: A FORMATION OF A CIVILIAN RESERVE.

Provision is made in the Army Estimates, a memorandum in reference to which has just been issued by Mr. Haldane, for the formation of a reserve of civilian surgeons, who should possess some training in the special requirements of army field hospitals and should also be available for service, upon mobilisation, both at home and abroad. Steps are to be taken to provide the necessary subordinate auxiliaries to such a reserve force. The Estimates for 1906-07 for medical establishment, &c., show a sum of £490,000, as against £482,000 in 1905-06.

ARMY RECRUITING.

The annual report for the year ending Sept. 30th last has been recently issued. The conditions that obtained during the period included in the report by Major-General Miles, Director of Recruiting and Organisation, were of an exceptional nature but speaking generally the results cannot be regarded as satisfactory. The number of recruits who joined the regular army amounted to 35,351 and for the militia 29,941, showing a decrease for both the regular army and the militia as compared with the previous 12 months. It may be remarked that medical inspection has been more stringent and the ratio of medical rejections consequently increased. The general result is that as regards infantry of the line in the year under review about 21,270 men for nine years' service have been obtained. The appointment of a district medical inspector of recruits appears to be one of the important changes that have taken place.

DENTAL SURGEONS IN THE ARMY.

The services of an additional dental surgeon are required for duty with troops in the United Kingdom from April 1st next. He will be required to devote his whole time to military duty and will receive an inclusive salary of £365 per annum and travelling expenses. The period of engagement will be for one year and under conditions specified in the contract and the necessary dental appliances will be provided. Applications should be addressed to the Secretary of the Army Council, 68, Victoria-street, London, S.W., not later than March 21st.

MILITARY TRAINING.

There seem to be several schemes in the field at the present time which have one aim and object in common—namely, that of overcoming our unpreparedness for war while avoiding conscription. It may be said of them that they would not only prove advantageous from a military but from a physical and moral point of view, and in that respect have a medical interest. Lord Roberts's proposals, for example, have of late assumed a more definite and practical shape and he has, as everybody knows, been urging their general adoption with all possible ardour in the conviction that they are not only absolutely needed as a matter of national safety but that they are very reasonable and practically quite capable of being carried out. In the event of his proposals and of his scheme for a "citizen army" being taken up in anything like an enthusiastic and comprehensive way it would infuse a new spirit into public opinion and have a favourable effect on all branches of the military

service. In another direction Colonel Pollock's scheme, known as the *Spectator* experimental military training, will prove an interesting and important experiment. Colonel Pollock contends that it is feasible to train raw recruits in six months up to a standard of efficiency equal to that now attained in as many years by any regulars provided that the officer conducting the training is allowed a free hand. Assuming the success of the experiment it may follow that the militia can be rendered capable of furnishing an efficient national army of reserve. The result of this experiment will consequently be awaited with much interest.

COMPRESSED DRUGS IN THE GERMAN ARMY.

In an army on active service the *impedimenta* should be reduced to the lowest possible limit compatible with efficiency and although drugs do not, comparatively speaking, take up much room, still, everything that conduces to diminution of bulk or weight is worthy of consideration. It was not until 1897, according to Apothecary-Major Kopp of the French army, that the German military medical authorities bethought themselves of replacing the little packets of powders which had hitherto been supplied to their hospitals and dispensaries by something that would be less bulky and more readily conserved during the exigencies of warfare. Compressed tablets seeming to offer most practical advantages experiments were accordingly made with some of the simpler powders in daily use and the result proving satisfactory the process was extended to the more complicated medicaments. According to the latest edition of the medical regulations 18 different kinds of compressed tablets are now official in the pharmacopœia of the German army. In the subjoined list the numerals represent the quantity in grammes of the active ingredients in each tablet: citric acid, 0.60; salicylic acid, 0.50; antipyrin, 0.50; mint leaves, 2.00; calomel, 0.20; corrosive sublimate, 0.50; morphine, 0.01; phenacetin, 0.50; ipecacuanha and opium (equal parts), 0.30; ipecacuanha and tartar emetic (19 parts and one part), 0.65; opium, 0.06; rhubarb, 0.50; quinine, 0.30; bicarbonate of sodium, 1.00; carbonate of sodium, 1.00; tannic acid, 0.06; "Resolutive" tablet (sal ammoniac, 25 parts; liquorice, 25 parts; benzoin, one part), 1.00; and Schleich's tablet for hypodermic use (morphine 25 parts, cocaine 10 parts, and chloride of sodium 20 parts), 0.55. In addition to the foregoing tablets containing carbolic acid were formerly in use but have now been abandoned because the experience gained by medical officers of the German ambulances in the Transvaal showed that they were liable to melt during hot weather. As it is difficult to control not only the quality but also the quantity of the active ingredients in compressed tablets the military medical authorities decided to manufacture the supply themselves and to this end have established the necessary machinery at the headquarters of each army corps. The machines employed are for the most part American or else constructed according to American models. Up to 1901 the corrosive sublimate tablets were prepared in the machine invented by Bernegausch but as the process was found to be extremely dangerous to the workmen and, moreover, proved to be very expensive, the manufacture was suspended and all demands for this form of tablet are now met by purchase in the open market. The tablets prepared by the medical department are flat on both sides and have a diameter of 12 millimetres, excepting only the mint tablets, which are 20 millimetres in diameter, and those of Schleich, which are bi-convex, with a diameter of eight millimetres. Apothecary-Major Kopp admits that by substituting compressed tablets for powders wrapped loosely in paper the Germans have realised an incontestable advance, but he also thinks that this advance is more apparent than real. The French army so far possesses only two kinds of compressed tablets, but in the Central Pharmacy of the medical department they have all the appliances for the production of an unlimited supply. By distributing this machinery in so many directions the Germans clearly place themselves at a disadvantage.

DONATIONS AND BEQUESTS.—St Mary's Hospital has received an anonymous gift of £1000 in relief of its present great financial difficulties.—The treasurer of St. Bartholomew's Hospital has received £100 from Sir Thomas Smith towards the rebuilding fund. This is a third instalment.

Correspondence.

"Audi alteram partem."

STATICS AND DYNAMICS IN THE TREATMENT OF LOCOMOTOR ATAXIA.

To the Editors of THE LANCET.

SIRS,—So long as the etiology of this affection is not fully understood the treatment is likely to be indifferent in its results. The pathology of locomotor ataxia consists essentially in a loss or impairment of the guiding sensations normally passing from the lower extremities to the brain centres. My idea in making use of the following method of treatment originated in the view that by giving the limb muscles more work to do in the way of lifting or overcoming resistance they would be put more upon the stretch and thereby a stronger sensation would be sent up the conducting nerves and columns. This sensation being stronger would have more chance of passing through the partially obstructed routes and of thus reaching the interpreting cerebral areas. In other words, the diminished muscle sense would be stimulated and increased.

One may look upon a victim of this affection as suffering from vertigo in the feet; he fails to realise where the soles of his feet are. There is a light-footedness—comparable to the light-headedness of vertigo—the feet and legs are unstable, jerky, and jumpy. The power of directing the feet and legs and stepping out properly and regularly is much impaired, resulting in the characteristically exaggerated and unsteady gait. Balancing power is greatly lessened. The patient seems to have lost ballast and the sense of proportion and weight is diminished. It has often seemed to me that some of these conditions and deficiencies might be improved by increasing the force the muscles have to overcome and by supplying the ballast that seems to be lost. A recent fashion was to stretch the spinal tracts from above by suspending the patient by the head. The treatment I recommend and have found very helpful consists of stretching the nerves and muscles from below.

I have special boots made with lead in the soles varying in amount from two to three pounds. The boots are ordinary stout leather, laced ones with a layer of sheet lead in the sole between the layers of leather extending from the toe to the instep. It takes the foot in taking a step is brought forcibly to the ground upon the heel, as proved by the heels being worn away long before the soles. For this reason I direct that only the soles of the boots should be loaded and not the heels. Both of the cases in which I have employed the loaded boots are well-marked instances of tabes dorsalis.

A man, aged 35 years, has been suffering from this disease for over ten years and has had long courses of treatment, both hospital and private. For some months during severe attacks of laryngeal adductor spasm the necessity for tracheotomy was imminent. He has latterly been too unsteady to venture out-of-doors, unless occasionally with a great effort, and leaning on his wife's arm. He describes the effects of wearing the heavy boots as giving him much more control over his feet and legs both when sitting and walking. The muscles seem stronger and there is much less spontaneous, irregular, and uncontrollable movement. He can sit quietly in the chair with the boots on, as there is much less jerking and jumping of the feet. He says that he seems to have much more feeling in the balls of the toes and can make more use of the toes when wearing the boots. He can rise from a chair much better. When standing he can balance himself much better and can even stand alone. This he could never attempt to do before using the special boots. When walking he has greater confidence, can measure his steps much better, and can bring the foot down in a more natural way—much less heel action. He can also regulate his pace and walk slowly if he wishes, which was not easily done before. He is now walking distances of from two to three miles and only uses a stick to assist him.

A man, aged 33 years, has been suffering from tabes for over three years and has all the characteristic indications. Deficient action of the mucous membrane of the nose and pharynx brought him under my care. This was accompanied by shortage of mucous secretion in the

stomach and bowels, resulting in indigestion with much flatulency and intractable chronic constipation. The mucin treatment locally and generally has successfully overcome these troubles. He was a patient a year ago at Queen's-square Hospital for Paralysis and has had all kinds of treatment, including Frenkel's exercises. Nothing has done him any good until the last few weeks, when he has been wearing the weighted boots. He finds that he can balance himself much better, can rise up and turn round well, and is able to walk in the dark a great deal better. There is much less jerking movement of the legs. He says his fear of falling has gone and that walking in a strong wind is quite different now. Since he feels his feet much more with the heavy boots on he does not require to watch them so attentively in walking. This patient has gone on so well and gained such confidence that he can almost dispense with a stick entirely. In walking he says his feet no longer describe a semicircle and that he can bring them more accurately to the ground. The neighbours in the country village where he lives have remarked on his improved gait. This man I have also tried with weights in his hands and pockets, but he says that the heavy boots have helped him most. When indoors in his slippers he again loses all control of his feet and they jerk and jump about.—I am, Sirs, yours faithfully,

W. STUART-LOW,
Assistant Surgeon, Central London Throat
and Ear Hospital.

Welbeck-street, W., March 1st, 1906.

ANTERIOR OR POSTERIOR GASTRO-ENTEROSTOMY?

To the Editors of THE LANCET.

SIRS,—I feel sure that all who are interested in the surgery of the stomach will cordially approve of the congratulation you offer to Mr. H. J. Paterson upon the contributions he has made to this subject in his recent Hunterian lectures. Where there is so much that is excellent it may seem almost churlish to discover a fault. But I think Mr. Paterson will not be surprised to hear that on the question of the relative merits of anterior and posterior gastro-enterostomy I am in complete and confident disagreement with him. And it is not only with him, I find, but with the writer of the leading article in THE LANCET of March 3rd, and farther with a recent contributor to your columns, Mr. W. H. Battle, who writes (Feb. 3rd, p. 276, column 1): "The anterior operation, moreover, possesses advantages which are likely to make it the more favoured operation of the future"; and also, "It is very probable that the anterior operation has been performed much more frequently than the posterior." Now whereas a single statement of opinion may well be left unchallenged the almost simultaneous publication of three authoritative opinions such as these cannot be ignored without a tacit admission that the weight of argument and of experience is on the side of the writers. I must, therefore, record once again my opinion that every argument and all experience show that the posterior operation as now performed is in every particular a better operation than the anterior. At the outset I may say that I do not wish to speak ill of my friends and the anterior operation has served me well; I have had, and still have, good results from it. But I never now perform it if the posterior operation is possible. My last two cases of gastro-enterostomy for carcinoma have been performed by the anterior method but it was only because the invasion of the transverse mesocolon by growth made access to the posterior surface almost impossible.

I will take the statement made in your leading article first. You say: "A careful examination of a long series of cases in which the posterior operation has been done will show that it is by no means free from dangerous complications; especially is there a liability to the protrusion of an internal hernia by the passage of small intestine through the opening made in the mesocolon." Unhappily, I can speak with too much experience upon this point. One of my patients died from such a hernia and two others have had such hernia discovered when the abdomen was reopened, in one case by Mr. A. E. Barker, in another by myself. But with the present method of performing the operation, when the edges of the mesocolon are sutured to the jejunum close to the anastomosis, there is no possibility of a hernia occurring. Mr. Paterson on this point writes: "Whether this will prevent the occurrence of internal hernia

remains to be seen, possibly it will, but it is also possible that the adhesions may constrict the anastomotic opening." The word "possibly" here is rather weak. By stitching the edges of the mesocolon to the jejunum the opening into the lesser sac no longer exists, the passage of bowel through it, therefore, cannot occur. With regard to the possible formation of adhesions, all I can say is that adhesions have never been known to form and that there is no reason why they should form if the operation is properly done, since no rough or damaged places are left. (I may here irrelevantly express my belief that many post-operative adhesions are due to sepsis, but of that I will write anon.) It is worth while to remark that in two cases where I had to operate a second time after gastro-enterostomy had been performed by other surgeons the cause of the persisting vomiting was found to be a constriction of the distal loop by adhesions. In both the anterior operation had been performed. The argument against the posterior operation that it makes possible a hernia of intestine into the lesser sac I admit was valid in the early days of the operation before the technique was fully developed. Now such an occurrence is impossible.

Your next argument is: "It is certain, too, that the posterior operation is more difficult and takes longer to perform than the anterior operation." Is it certain? It is no uncommon thing for a surgeon who has seen me perform posterior gastro-enterostomy to remark that the operation "looks easy enough." Questions of ease or difficulty are largely personal, and I will not say more than this, that whether easy or difficult there is little or nothing to choose between the two methods. Nor is there anything of material difference in the time occupied. I have probably performed the posterior operation from beginning to end in less than 20 minutes on at least a dozen occasions, and in the very great majority of cases the whole time occupied (from the first incision to the last stitch) is under half an hour. I do not find there is any difference at all between the two methods, and there is no reason why there should be, for the manipulations in the two are exactly the same for the only part of the operations that consumes much time, that is, the stitching.

Mr. Paterson refers to regurgitant vomiting and you say "obstruction at the efferent opening is the real cause." I quite agree that obstruction is the real cause but it may be surely at the afferent opening as well as at the efferent. The proximal jejunal limb becomes "waterlogged" and by kinking obstructs, it may be, both afferent and efferent openings. Be that as it may, I agree that obstruction is the real cause. Regurgitant vomiting means high intestinal obstruction and that it is due to obstruction at the anastomosis is shown by the fact that it is relieved by a short-circuiting operation by uniting the afferent and efferent limbs of the jejunum. The cause of this obstruction I submit, therefore, is to be found in the "loop." It is not a question of anterior or posterior methods primarily at all. If a loop is left in the posterior method regurgitant vomiting, as my cases and Mayo's also show, is just as likely to occur as after the anterior method. But—and here lies the great advantage of the posterior operation—in the anterior method a loop is absolutely necessary; in the posterior as we now perform it there is no loop at all. The jejunum lies in its normal position, the relative position of the parts (as may be seen on transverse frozen sections) is very little if at all altered from the normal. The other forms of intestinal obstruction that have followed the operation, excluding obstruction by a Murphy's button, are due to rotation of the anastomotic loop, which has only occurred once after the anterior operation, and to strangulation over the proximal limb of the jejunum of small intestine which passes in between this loop and the under surface of the mesocolon, either from right to left or from left to right. As the operation of posterior gastro-enterostomy is (or should be) now performed, these strangulations cannot occur; by the anterior method they are always possible, because of the necessary existence of a loop. Strangulation of the transverse colon by the jejunum occurs, of course, only after the anterior operation.

Next with regard to jejunal ulcer. Mr. Paterson says: "This statement"—that is, that the ulcer occurs oftener after the anterior operation—"is not necessarily correct." But Mr. Paterson had not found all the recorded cases nor had Mr. Battle when writing his paper. Up to the present 33 cases have been described; in 29 of these the nature of the operation is mentioned. In 17 cases anterior gastro-enterostomy had been performed; in four cases anterior

gastro-enterostomy with entero-anastomosis; in one case anterior gastro-enterostomy in Y; in six cases posterior gastro-enterostomy with a long loop; and in one case posterior gastro-enterostomy with a long loop and entero-anastomosis. The point which is clearly made from this is that it is the low opening in the jejunum which, so far as any part of either method is concerned, is a factor in the causation of the so-called "peptic" ulcer. Mr. Battle evades this point, I think, when he states that it is very probable that the anterior operation has been performed more frequently than the posterior and that therefore jejunal ulcer would have occurred oftener after the former operation. I should rather say that it is almost certain that the posterior operation has been performed far more frequently. At least of this there can be no question that the surgeons who are doing the largest number of these operations confine themselves almost exclusively to the posterior operation. And, after all, that, it seems to me, is the really important point. We have all practised the anterior operation as a routine operation; we still practise it occasionally, but we are convinced from the results of the cases that the posterior operation is the better. It is not a question of good and bad but of good and better.

I do not think the position is accurately stated when it is said that "the wave of fashion has been increasingly in favour of the operation" any more than it would be to say that the wave of fashion is increasingly in favour of removing the axillary glands in carcinoma of the breast, or of doing something more than removal of the sac in the radical operation for inguinal hernia. Fashion has in it something of caprice; the choice of the posterior operation is the result of a considered and well-reasoned opinion that it is a safer and, so far as after-results are concerned, a more successful operation than the anterior. It is a "fashion" established by long experience and sanctioned, I think I am right in saying, by all those who are working extensively at this subject. But I think it necessary to say that the posterior operation should not be performed in a haphazard way but that certain reasoned principles should always be observed; these concern the position, and direction, and size of the opening in the stomach, the position and direction of the opening in the jejunum, and the suture of the mesocolon to the jejunum after the anastomosis is complete. It is because of these points that the immediate and remote results of posterior gastro-enterostomy are better than those achieved after the anterior operation. If no regard is paid to them then there is no advantage in the posterior method. The posterior operation is the better, not because it is posterior, but because, being posterior, it permits certain principles to be observed, which on purely mechanical grounds are impossible in the anterior operation.

I am, Sirs, yours faithfully,

Leeds, March 4th, 1906.

B. G. A. MOYNIHAN.

CONGENITAL HYPERTROPHY OF THE PYLORUS.

To the Editors of THE LANCET.

SIR,—Mr. H. J. Paterson in his admirable Hunterian lectures¹ on gastric surgery discusses the treatment and mode of operation for the infantile variety of pyloric hypertrophy. His statistics of pyloroplasty are unduly favourable, showing six recoveries out of nine cases. Compared with his collected results of gastro-enterostomy, 11 recoveries out of 25, pyloroplasty would seem the more suitable operation. My figures give much the same results as regards gastro-enterostomy—viz., 16 recoveries out of 34. Of pyloroplasty the results are not as good as the figures given by Mr. Paterson, for only seven out of 14 got well from the operation and of these two died subsequently, 54 days and three months later, from gastro-enteritis.

The object of this letter is to point out that statistical results of operations are of little value, for the prognosis depends on the marasmic state of the infant when it reaches the surgeon's hands. This is well shown by eight of my own cases on which Mr. Clinton T. Dent performed pyloroplasty. Three private patients were operated on within six weeks of birth and all have recovered apparently perfectly. The other five were hospital cases, all more or less marasmic, and of these two died shortly after operation, two died subsequently as above stated, and one recovered but almost died from severe gastro-enteritis. These

¹ THE LANCET, March 3rd, 1905, p. 577.

cases do not support Mr. Paterson's views on the benefit to be derived from breast-feeding, for the three private patients were breast-fed infants. I think he speaks much too optimistically of the advantages of careful feeding and lavage. I think he is inclined to give too much credit to reports of cases cured without recourse to operation. Many of these are of doubtful character, the diagnosis being based on vomiting, constipation, and perhaps visible peristalsis and the presence of a tumour. Seeing that a tumour is felt with great uncertainty in early stages, it is conceivable that it may be supposed to be felt when it does not really exist. I have seen several *supposed* cases get well without operation, but in no one of them did I agree with the diagnosis. On the other hand, I have no doubt that a mild degree of the condition can exist without proving fatal, for of this we have distinct evidence in the cases seen in older children. Yet of 15 cases which have come under my notice all have been verified at operation or post-mortem examination. Only two of the last ten have been treated by purely medical measures and both succumbed. I write this letter with the view of insisting on the importance of early surgical interference, for it is on this rather than on the particular operation that success depends. I fear that Mr. Paterson's observations will tend to make physicians procrastinate unduly.

I am, Sirs, yours faithfully,

Upper Brook-street, W., March 3rd, 1906. EDMUND CACTLEY.

THE FEELING OF NAUSEA EXPERIENCED DURING EARTHQUAKES.

To the Editors of THE LANCET.

SIRS,—In studying the earthquakes of Great Britain, my attention has not infrequently been drawn to a feeling of nausea experienced during the comparatively slight shocks which visit this country. If the evidence had been supplied in answer to definite questions, some doubt might have been felt as to its reality. But as the information given was not at first prompted in any manner, and as a feeling of nausea is by no means a well-known effect of an earthquake shock, either weak or strong, it would seem that the records of its occurrence are to a great extent trustworthy and that the phenomena reported deserve attention. In my studies of more recent British earthquakes, including the second of those mentioned in the next paragraph, I inserted a question on the subject with a view of ascertaining the duration of the feeling.

The British earthquakes referred to in this note are the Hereford earthquake of Dec. 17th, 1896, and the Doncaster earthquake of April 23rd, 1905. Some interesting observations were also made during the great Charleston earthquake of August 31st, 1886. The Hereford earthquake occurred at 5.32 A.M. It originated almost simultaneously in two foci, the centre of the more important being about three miles south-east of Hereford and that of the other about three miles north-east of Ross in the same county. The shock, which lasted on an average for nine or ten seconds, was strong enough to cause slight damage to buildings within an area of 724 square miles. In Hereford itself more than 200 chimneys had to be repaired. The shock was felt over an area of about 98,000 square miles and was strong enough to make doors, windows, &c., rattle at a distance of 180 miles from the origin. It should be noticed that the period of the vibrations increases as the earth-waves spread outwards. Close to the centre the general impression produced was that of riding in a carriage without springs, the vibrations at one place being so fierce and quick that they resembled the beats of an engine going at 50 miles an hour. Farther away, at distances of about 90 or 100 miles, the movement was of a pleasant, gentle, undulating character, more like that felt during the rocking of a ship at anchor or in a carriage provided with good springs. But probably in no part of the disturbed area did the period of the principal vibrations exceed one-third or one-half a second. As to the range of the movement, it cannot have been more than a small fraction of an inch even in the neighbourhood of Hereford. As a rule, the feeling of nausea experienced during this earthquake was only temporary, though with one observer at Worcester (21 miles from the centre) it lasted all day. In two cases, one seven and a half miles and the other 15 miles from the centre, persons are said to have been actually sea-sick but I have not this information from the sufferers themselves. The feeling was noticed at considerable distances from the centre—for example, at Weymouth

(106 miles), Richmond, Surrey (110 miles), London (113 miles), and Bradford (125 miles), the movement at the last-named place being so slight that nothing more than a weak tremor was felt.

The Doncaster earthquake occurred at 1.37 A.M. on Easter Sunday, 1905, and also originated nearly simultaneously in two foci, one about half a mile north of Bawtry, the other about four miles east of Crowle in Lincolnshire. The disturbed area contained about 17,000 square miles and the shock was strong enough to make doors, windows, &c., rattle to an average distance of 75 miles from the principal focus near Bawtry. There was no injury caused to buildings in any part of the disturbed area. A feeling of nausea was rather frequently experienced (by about 1 in every 50 observers), as often by those who were asleep as by those who were awake, and by men as much as by women. It was felt as far as Rippingale, near Bourne in Lincolnshire, which is 31 miles from the principal focus. With some the feeling was only momentary, with the majority it lasted for a few minutes, while one or two felt sick for an hour or more afterwards. Two observers, at five and eight miles respectively from the centre, inform me that the shock made them sick.

More remarkable still is the evidence furnished by the disastrous earthquake of Charleston in 1886, which was felt to an average distance of 950 miles from the centre. In the central part of the disturbed area the feeling of nausea was seldom experienced or, at any rate, recorded and it is not improbable that it passed unnoticed by persons in their wild hurry to escape from falling buildings. But outside the area, in which the shock was strong enough to overthrow vases and ornaments or make pictures swing, records are somewhat common and it is noteworthy that they come from two places more than 800 miles from Charleston, where the movement was too slight to make even doors and windows rattle and, indeed, was only just perceptible to the unaided senses.

The observations described above thus show that a feeling of nausea may be produced in some persons by an earthquake shock lasting not more than eight or ten seconds and consisting of vibrations of which the total range is only a small fraction of an inch and of which the period is little, if at all, more than half a second.

I am, Sirs, yours faithfully,

CHARLES DAVISON, Sc.D., F.G.S.

Edgbaston, March 1st, 1906.

OFFICIAL STANDARDS OF PURITY FOR JAMS.

To the Editors of THE LANCET.

SIRS,—May I crave the courtesy of your space for the purpose of indicating one or two errors in your note on Jams and jam-making in THE LANCET of March 3rd, p. 613? You rightly state that jam is now an important article of every-day diet and that it is essential for so much used an article to be pure. But in warning the public to beware of adulteration you write as though adulteration—i.e., the mixing of fruits and vegetables other than those specified on the label—were the equivalent of impurity, and as though cheap jams were necessarily inferior from a dietetic point of view to more expensive ones. Neither of these things are true. For example, if we take a high-priced jam, such as raspberry, cheapened so as to bring it within the reach of the poorer classes, the articles with which it is "adulterated" consist usually of apple or gooseberry. Now, while it is true that we have here a technically adulterated article, it is not true that it is in the slightest degree unwholesome. I am also quite at a loss to know what are the "grosser substitutes" as fruits are so cheap that it would not pay manufacturers to look elsewhere for ingredients. When you refer to vegetable marrow—although this could not be objected to on the score of wholesomeness—I am of opinion that this is knowledge derived from housewives' and not manufacturers' practice.

There is also a confusion in your note concerning the respective health values of beet and cane sugar. In advising that only cane sugar should be used you imply that beet sugar is unwholesome. The truth, again, is that refined beet sugar is unwholesome. The ordinary white lump or crystal—sugar—ordinary white lump or crystal—is purer than cane sugar—having gone through an extra refining process. Your warning against glucose, which in all probability is due to confusing the lump glucose used by brewers and the liquid form used by confectioners, is also wide of the mark. The

est comment upon this is that in America, to which you make reference, glucose is an everyday article on the breakfast-table and tea-table. Nor is it true that the reason for using glucose is its cheapness. The reason for using glucose is to prevent granulation and I am rather curious whether you would prefer the use of cream of tartar or some similar agent. I may also point out that the great cause of cheapness is that with the exception of the fruit they are manufactured from perfectly wholesome by-products of the confectionery trade. It is not too much to say that the price of jam bears no relation to the market price of sugar. The manufacturing confectioner must choose between obtaining a market for these products and throwing them away.

I should not have trespassed on your space, but bearing in mind that wholesome jam can at present be bought at from 2d. per pound upwards it is important that the poor should not be deprived of a nutritious food, either by misleading, though well-intentioned, advice, or by Acts of Parliament passed under false impressions.

I am, Sirs, yours faithfully,

MORRIS STREIMER.

March 6th, 1906.

* Mr. Streimer mistakes our contentions *in toto*. We never hinted that "raspberry jam" adulterated with apple or gooseberry is unwholesome. But it should not be called raspberry jam, at any rate without explanation. If Mr. Streimer were to ask for two ounces of tea and he was supplied with one ounce of tea and one ounce of coffee, would he be satisfied? As regards beet sugar, we said nothing about it. With respect to glucose, we know perfectly well that glucose will not crystallise and that this is the reason put forward for its use. But the fact remains that the price of cane sugar is 25s. per cwt. and that of glucose is about 10s. If glucose were the crystallisable substance and cane sugar the non-crystallisable would jam manufacturers use the latter? We have no objection upon sanitary grounds to "raspberry" jam being made of apples or gooseberries or beetroot provided that the fact is announced on the label. In the same way jams made with glucose should be so labelled. Mr. Streimer should have no objection to this course. He says that substitute jams are wholesome and that glucose is better than cane sugar as it does not crystallise. Therefore, let him tell his customers plainly what they are buying. With regard to the statement that the price of jam bears no relation to the price of sugar we remember that when in 1904 the price of sugar went up the jam manufacturers said precisely the opposite.—ED. L.

INFANT FEEDING AND EPIDEMIC DIARRHŒA.

To the Editors of THE LANCET.

SIRS,—I should deem it a very great favour if you would afford me space in your journal to refer very briefly to the leading article in your issue of Feb. 24th, p. 533, in which you discuss a paper written by me for the *Journal of Hygiene on Epidemic Diarrhœa*. In this article you very justly point out that the numbers I dealt with—namely, 123 deaths in infants from diarrhœa—are not sufficient to give a trustworthy indication of the relationship between the diets on which infants are reared and their susceptibility to fatal diarrhœa. I supported my inferences by quoting Dr. A. Newsholme's work on the same subject. My numbers were small because from the information available I only selected cases where there was no suggestion of uncertainty as to the diet on which the infants were being fed immediately prior to their attack of diarrhœa. Doubtful and ambiguous cases I discarded.

In the report on the health of Finsbury for 1905 Dr. G. Newman has tabulated the diets of 371 infants dying from diarrhœa in the years 1902-05. Of these, 203 were fed either on condensed milk or cow's milk in the proportion of 42 to 58. My figures based on smaller numbers and arrived at by my own method in the years 1903-04 give almost identical results for the same borough. Out of 107 artificially fed children dying from diarrhœa I found that 41 per cent. were fed on condensed milk and 59 per cent. on cow's milk. Dr. Newsholme of Brighton has investigated the cases of 71 infants fed on cow's milk or condensed milk and dying from

diarrhœa. Of these he found that 45 per cent. were fed on condensed milk and 55 per cent. on cow's milk.

Both in Finsbury and Brighton the diets of children surviving for the first year of life have been recorded, the Finsbury figures being based on 554 children and the Brighton figures on 633. Of these some 70 per cent. were breast-fed. The following are the results put briefly and as percentages:—

	FINSBURY.	Condensed milk.	Cow's milk.
Deaths (107) from diarrhœa, 1903-05	41	59	100
Deaths (53)	42	58	100
Survivors (161)	33	67	100
	BRIGHTON.		
Deaths (71) from diarrhœa	45	55	100
Survivors (151)	27	73	100

If the percentages for "survivors" are compared with the percentages for "deaths" immediately above them in the vertical columns it will be seen that a strong case against condensed milk has been made out in both Finsbury and Brighton by entirely independent observers. Similar results have been obtained by the medical officer of health of Croydon. May I express the opinion that there is more in this than coincidence and that when the Finsbury figures amount to thousands, as ultimately they will, it will be found to be a fact, and not a guess from insufficient data, that infants fed on condensed milk are more liable to fatal diarrhœa than infants fed on cow's milk.

I am, Sirs, yours faithfully,

J. E. SANDILANDS.

Launceston place, Kensington, W., March 6th, 1906.

LOW-TENSION HIGH-FREQUENCY CURRENTS AND ULTRA-VIOLET RAYS.

To the Editors of THE LANCET.

SIRS,—I regret that in my paper on a New Method for the Production of Ultra-violet and Other Rays, published in THE LANCET of March 3rd, an unfortunate, but obvious, error occurs due to a mistake in copying from my original draft. In the second paragraph on p. 538 there is this sentence: "These experiments induced me to have constructed a third machine which would deliver ten amperes at 80 volts with a periodicity of 260,000,000 per second." "Second" should read "minute," as the context clearly indicates.

With respect to your sympathetic references to my article under the head of "Annotations," I note your comment that I do not state how I arrive at my measurements in the claim I put forward of being able to pass from six to seven amperes through the body without any painful or disagreeable sensation. My reply is that what are known as "dead-beat" meters were used and that these had previously been subjected to the most careful and stringent tests by well known and reliable London makers. Then, too, by short-circuiting the apparatus, with the meter in circuit, corresponding, and at the same time confirmatory, measurements were obtained. I need hardly add that I shall be happy to afford every facility for an independent test being made of the machine and the new ray tube.

I am, Sirs, yours faithfully,

Carlisle, March 6th, 1906.

J. CUNNINGHAM BOWIE.

THE EMPLOYMENT OF CHLORIDE OF ETHYL AS A GENERAL ANÆSTHETIC.

To the Editors of THE LANCET.

SIRS,—Your remarks in THE LANCET of March 3rd, p. 616, upon the use of chloride of ethyl as a general anæsthetic and the inferences which you draw from the sad fatality recently reported seem to call for further comment. Those who have frequent opportunities of administering this anæsthetic are almost unanimous that it is a most valuable and safe agent in suitable cases and in experienced hands, while they are equally agreed that it is certainly not an anæsthetic to be employed by the inexperienced. It is, in fact, the ideal anæsthetic for operations of such a length that gas or gas and oxygen would give too transient an anæsthesia, while ether would give an unnecessarily long one; in other words, for operations requiring an anæsthesia of from 50 to 120

cases do not support Mr. Paterson's views on the benefit to be derived from breast-feeding, for the three private patients were breast-fed infants. I think he speaks much too optimistically of the advantages of careful feeding and lavage. I think he is inclined to give too much credit to reports of cases cured without recourse to operation. Many of these are of doubtful character, the diagnosis being based on vomiting, constipation, and perhaps visible peristalsis and the presence of a tumour. Seeing that a tumour is felt with great uncertainty in early stages, it is conceivable that it may be supposed to be felt when it does not really exist. I have seen several supposed cases get well without operation, but in no one of them did I agree with the diagnosis. On the other hand, I have no doubt that a mild degree of the condition can exist without proving fatal, for of this we have distinct evidence in the cases seen in older children. Yet of 15 cases which have come under my notice all have been verified at operation or post-mortem examination. Only two of the last ten have been treated by purely medical measures and both succumbed. I write this letter with the view of insisting on the importance of early surgical interference, for it is on this rather than on the particular operation that success depends. I fear that Mr. Paterson's observations will tend to make physicians procrastinate unduly.

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TEMPERANCE LEGISLATION IN FRANCE.

ABOLITION OF TAXATION ON WINE AND BEER AS A
MEANS OF PREVENTING ALCOHOLISM.—A
GIANTIC EXPERIMENT WITH
"HYGIENIC DRINKS"

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PART I.—INTRODUCTION.

THE members of the London County Council who so recently and successfully endeavoured to promote *franchise* by their visit to Paris have, in their own country, striven with perhaps more zeal than wisdom to cope against the great evil of alcoholism. In Paris they might have benefited by one of the most remarkable object-lessons on this subject that can be found in any part of the world. Here, at least, an experiment has been made on a gigantic scale which should be very carefully watched by all interested in the temperance question. Indeed, the whole of France has been through a most interesting and instructive experience. Only a generation back the British tourist and traveller who crossed the Channel was generally surprised by the wonderful sobriety of the French people. He might be months abroad without so far in the streets a single case of drunkenness, especially if travelling in the centre and south of France. Even in the streets of Paris it was rare to meet a drunkard; and as for a drunken woman, that was absolutely unknown. Of later years, however, the same could not be said. Though, even at its worst period, France has remained a very sober country when compared with England, still there was a moment when alcoholism and crime were so much on the increase that a special commission was appointed by the French Senate to inquire into the matter. The result of this and many other investigations established the fact that the increase of alcoholism in France and, indeed, in other countries, notably in Switzerland, coincided with the destruction of the vine by the phylloxera. As natural cheap wines rose in price and often were not to be procured at any price, so did alcoholism become more prevalent. By the term alcoholism is meant, especially abroad, not mere drunkenness but a diseased condition of the body.

The inquiries made on the continent went to show that though a man might be drunk occasionally he might be but little the worse physically or morally, whereas another man who was never drunk might suffer from cirrhosis of the liver and other morbid changes such as entailed both moral and physical degeneration. Further, it was noticed in practice that it was often the younger men who were the sufferers; in fact, these victims were men who had reached the adult age at about the time when the prevalence of the phylloxera rendered it a matter of great difficulty to obtain pure wine. These younger men more readily resorted to absinthe, vermouths, and various spirituous bitters, but their fathers could not so easily throw off the habits of a lifetime. Even when wine was more and more difficult to obtain they persisted in drinking wine and suffered less, though they sometimes drank to excess while their sons remained sober. From all this it became obvious that even occasional drunkenness produced by pure wine was less dangerous than sobriety on impure spirits, on the alcohol of commerce. It was also evident that as in consequence of its scarcity wine became more sophisticated and artificial, drunkenness, or rather the disease of alcoholism, became more and more prevalent even among the wine-drinkers. The alcohols of commerce, with which diluted real wines or wines made with dried currants are strengthened, were often inefficiently rectified and more or less poisonous. The observations made on individuals and on the community at large were confirmed by experiments on animals. It was demonstrated that the harm resulted from the nature rather than from the quantity of drink or of the alcohol consumed. Such alcohol as results from the natural process of the fermentation of a fruit juice or of wholesome barley and hops might intoxicate but was not likely to produce the disease known as alcoholism. Nor were the populations that enjoyed an ample and cheap supply of such drink at all given to drunkenness. In the wine-growing countries, practically speaking, there is no drunkenness, and still less are there any cases of alcoholism. Hence the term "hygienic drinks" arose as applied to those beverages

which only contain alcohol in this comparatively innocent form.

In the course of time this term became incorporated, not only in the language of social and sanitary reformers, but it now stands forth in statute books and is recognised as a legal definition. Among sanitary reformers, notably at the International Congress of Hygiene held in Geneva in 1892, it was argued that the ethylic alcohol, such as is produced by the fermentation of grape juice, did not cause the disorder of chronic alcoholism unless taken in great excess. But alcohols obtained by the fermentation of beetroots, potatoes, and grain did give rise to these lesions even when consumed in very small quantities. In 1893, when the Congress met at Vienna, a very elaborate discussion was held and a lengthy motion was adopted urging that every effort should be made to promote the sale of cheap and healthy drinks. What was then said and meant was confirmed and reaffirmed by the International Congress of Hygiene when it again met, this time at Budapest, in 1894. On that occasion the entire Congress, at which 23 nations were represented, adopted without a single dissenting voice the following motion:—

"All administrative public authorities should be permitted to combat alcoholic excesses by all the means which are at their disposal, according to the special local conditions. The measures in question are as follows:—a) as to the temperance movement, b) the limitation of the sale of alcohol, c) the surveillance of distilleries and the pure preparation of alcohol, d) the regulation of the sale of alcohol, e) the limitation of the sale of beer and wine, the creation of asylums for the alcoholics, and the placing of habitual drunkards in the reformatory."

The most original of the above proposals was the demand that the taxation on beer and wine should be reduced. The State monopoly of alcohol exists in Russia and Switzerland. The other remedies advocated had already been carried into practice in most countries where drunkenness abounds, but as yet no endeavour had been made to reduce the cost of wine and beer as a means of promoting temperance. Indeed, this is a proposal which, though it was widely approved on the Continent some years ago, where practical knowledge exists of its likely effects, will even now seem to be quite a new suggestion to many English temperance reformers. But what the members of the London County Council who are so interested in the temperance question might have learnt during their recent visit to Paris is that this is no longer a mere suggestion. The proposal has been carried into effect and this on a gigantic scale and in the most favourable circumstances. It is obvious that to reduce taxation on wine would be of little service to the cause of temperance if wine, nevertheless, remained an expensive luxury. Nor would the end in view be attained if wine is only cheap because it is sophisticated, made with deleterious substances, and strengthened with poisonous alcohols of commerce. The fortunate circumstance of the present great national experiment is the fact that France has completely recovered from the phylloxera. On American roots, which it was found resisted the ravages of the phylloxera, the old French vines were grafted. In time they have grown and developed. Once more the vine-clad hills and fertile plains of France yield such an abundance of wine that we may here find a happy solution of the temperance question, not only so far as the French people are concerned, but in regard to the peoples of other nations as well. To-day simple, pure, natural wine is so abundant that it costs much less than mineral water and not more than the glass of the bottle in which it may be placed. If the price is not artificially raised by taxation pure wine is now the cheapest of all drinks. Therefore, if cheap, pure wine can prevent alcoholism now is the time to prove this assertion and the most satisfactory fact of all is that this opportunity has not been lost. A great nation has deliberately set to work to demonstrate by practical experimentation on the entire population that cheap, pure wine prevents alcoholism and nowhere has this been done in a more absolute and thorough manner than in the capital of the country, in Paris itself.

It would be a foolish exaggeration, however, to imagine that the French Government, the nation's Parliament, and the municipalities have stepped into the political arena as knight-errants ready to do battle with the monster alcoholism, and this without any other motives or considerations than those inspired by philanthropy or the desire to make scientific researches. Even at the risk of blurring so beautiful a picture strict regard for the truth renders it necessary to record that the wine growers of France are suffering from the over-abundance of the supply. The *crise des vins* was a grievance which the numerous electors who possessed vineyards did not fail to press upon the

seconds. It is also most valuable as an antecedent to ether or chloroform.

I have had many opportunities of noting that some patients exhibit a very marked idiosyncrasy towards this drug and become anaesthetised by it with almost startling rapidity. In such subjects unless a very close observation is kept by an anaesthetist who from constant experience is thoroughly *au fait* with the signs and symptoms of profound anaesthesia an overdose is very liable to be administered. I have on several occasions anaesthetised patients in as few as three or four inspirations from an apparatus containing five cubic centimetres of the drug and noted signs of profound narcosis so deep that if the administration had not been instantly discontinued it is easy to imagine that a fatality would have resulted. Again, when this drug is used as a preliminary to etherisation anaesthesia from the latter agent is sometimes surprisingly rapid, and it is by no means unusual for the patient to be ready for operation in under two minutes. These peculiarities, while they are decidedly advantageous in the case of a skilled anaesthetist, should make the ordinary practitioner, who perhaps only rarely acts as an anaesthetist, pause before using so powerful an agent, and it is obvious that ethyl chloride should never be used by an unqualified man.

In the list of eight fatal cases which you mention there are included at least two where death was definitely due to "rigidity of the jaws" or "respiratory spasm," while two more, classified as "respiratory failure" and "asphyxia," were very probably due to the same cause. Spasm of the jaws, occurring as a part of general muscular rigidity, is a very common phenomenon in ethyl chloride anaesthesia, and so much is this the case that it should be a constant rule never to commence the administration without inserting a prop between the jaws, so that the tongue may be instantly pulled forwards in case of need. This rule applies with special force to edentulous patients whose mandibles, should spasm occur, overlap the maxillae and may even press against the nose, rendering it almost impossible to open the mouth, even if a suitable mouth-wedge be at hand. The cases described as fatal from syncope may quite possibly, in my opinion, have been due to an overdose in patients who possessed an unusual susceptibility to the drug, and I venture to think that, if the possibility of this idiosyncrasy had been guarded against, and if a prop had been used in every case, the list of fatalities would have been a very much smaller one. Ethyl chloride is very liable to produce vomiting in patients whose stomachs are not empty and some of the recorded fatalities were due to inhalation of vomited material. This anaesthetic has so many and such great advantages to the operator, to the anaesthetist, and to the patient alike, that it would be a great pity if the undue prominence given to the report of the recent inquest in the lay press, and the comments thereon in THE LANCET, should cause an unmerited distrust of ethyl chloride in the minds of the laity or of the profession.

I am, Sirs, yours faithfully,

ARTHUR S. MORLEY

Anaesthetist to the Samaritan Free Hospital, &c.

Gower-street, W.C., March 3rd, 1906.

THE SALARIES OF POOR-LAW MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—It is much to be hoped that the Poor-law Commission may make recommendations with the double object of improving the remuneration for the medical treatment of the poor and also the conditions under which the poor are treated. The whole profession will agree with the former object, but there may be some difference of opinion as to the need of improved conditions. And yet it is impossible for anyone who has seen much of practice among the poor to fail to recognise that the Poor-law medical officer is not generally a popular person. The patients cling to the pay doctor, the club doctor, the dispensary, and the out-patient department, but they seldom welcome the suggestion that the parish doctor should be called in. One may freely admit that this is due to the office and not to the personality of the officer and may even regard it as a sign of grace that the patient shrinks from the stigma of pauperism. But those who are old enough to have seen the changed attitude of the London poor to their workhouse infirmaries must admit that there is less objection to being a

pauper in one of the modern palaces than there was in the days before the infirmaries could be thus described. I understand that in some districts in London when a vacancy has occurred in the Poor-law medical service the authorities have appointed several out-door medical officers, allowing the patients to choose which officer they will call in and dividing the salary amongst the various doctors according to the number of relieving officer's "orders" to which they have attended. It seems to me that in some such way as this the twofold object I have indicated above might be secured. It would be an advance towards the condition laid down by the British Medical Association as desirable in all forms of contract practice. I fear that if a mere demand for increased salary without altered conditions is presented to the commission but little notice will be taken of it. Government salaries of lawyers are looked after in the House of Commons by the large professional element having seats there. Our handful of medical Members of Parliament are quite unable to help us. By combination we must help ourselves.

March 2nd, 1906.

I am, Sirs, yours faithfully,

BETTER PAY.

To the Editors of THE LANCET.

SIRS,—I have read the interesting letter of "M.O." in your issue of Feb. 3rd on this subject and your admirable annotation on the same subject in THE LANCET of Feb. 10th. In my own district, which is much better off than most I know in having a smaller number of people who require attendance from the parish medical officer, the rate of salary works out at much less than the village policeman receives, and the time and attention one has to give to such cases as occur are quite as much as private patients receive provided one tries to do the work conscientiously, as I believe most parish medical officers do.

The present seems a good time to bring forward the question of adequate remuneration to Poor-law medical officers on account of the large number of Labour candidates who have been returned to Parliament and who must necessarily be interested in the medical relief of the poorer classes.

I am, Sirs, yours faithfully,

March 3rd, 1906.

ANOTHER M.O.

THE OPERATION OF APPENDICOSTOMY.

To the Editors of THE LANCET.

SIRS,—In continuation of my note on this subject, published in THE LANCET of March 3rd, p. 596, I should like to add that a third case was brought to my mind after I had despatched my communication to you. This case showed me how valuable the appendix may be when used as a drain in cases of obstruction in the colon. It was one of cancer and I performed, what I now consider to be, the unjustifiable operation of primary excision. The end-to-end anastomosis gave way in spite of very perfect drainage through the appendix which was widely dilated and hypertrophied (from previous continuous back pressure). A drawback in this case was the difficulty of getting the appendix to close.

I am, Sirs, yours faithfully,

H. M. W. GRAY,

Surgeon to Aberdeen Royal Infirmary.

Aberdeen, March 3rd, 1906.

BRADFORD EYE AND EAR HOSPITAL.—The annual report of the Bradford Eye and Ear Hospital for the year ending Dec. 31st, 1905, states that 6786 patients have received treatment during that period, as compared with 6543 in the previous year; 1034 in-patients were admitted; 1030 major operations were performed; and 22,624 attendances were made by out-patients. Of the 6786 patients above mentioned 5517 were ophthalmic cases and 1269 were aural cases. The hospital committee has issued a printed instruction to midwives on the protection of the eyes of newly born children; it is here recommended that immediately after the birth, and before anything else is done, the eyelids and all parts surrounding the eyes should be wiped with a soft dry white rag, that these parts should soon afterwards be washed with clean tepid water before any other part of the body is washed, and that medical advice should be obtained if the eyelids become red or swollen. The financial statement shows that the total receipts were £2675 and the total expenditure £2604. Mr. G. H. Oliver, Dr. J. H. Crawford, Dr. F. W. Earlich, and Dr. J. H. Mason were re-appointed as members of the staff on the expiration of their terms of office.

to well into the "eighties" there were practically no restrictions in regard to the entrance of foreigners into the United States. But it was found then that immigration had become so large that the cities were being, if not flooded, at least embarrassed by the tide of incomers. It was, therefore, as an act of self-defence that laws regulating immigration were introduced. The character of immigration was fast changing, as was shown by the disposition of the strangers to throng into the towns. In place of the respectable, healthy, fairly-well educated and skilled British and German workmen and agriculturists there came over an ever-increasing stream of Northern Italians and people from the poverty-stricken districts of Eastern Europe, unskilled, illiterate, and unsanitary in their habits. For the most part these people were only fit to live in towns, for they had no experiences save those of town life to draw upon, and were quite unable to take advantage of the vast tracts of unoccupied land of the United States. It must also be remembered that during the past 20 years, and more conspicuously during the past decade, the immigrants to the United States have been mainly Jews. The Irish have continued to come in and so has a sprinkling of Scandinavians. Only a few English or Scotch now emigrate to the United States. In New York city alone there were in 1904 more than 383,000 Italians, an increase of nearly 150,000 since the year 1890.

The first Act put into force in the United States which really dealt seriously with the problem of immigration was passed in 1891. The clauses of this Act which referred to medical inspection provided that such inspection should be made by officers of the Public Health and Marine Hospital Service and also prohibited steamship companies from encouraging emigration by alluring advertisements. The Act also provided for the deportation within one year after landing of any alien landed in the United States in violation of the law. In 1893 further legislation provided that the steamship companies should furnish lists or manifests, made at the time and place of embarkation, which should contain all the necessary information concerning the immigrants. The same Act contained a provision by which the steamship companies that permitted diseased persons to take passage for America when their diseased condition must have been apparent were fined 100 dollars for each alien brought in suffering from a loathsome or dangerous contagious disease which might have been detected by means of a competent medical examination at the time of embarkation. The regulations are not only strict but are rigidly enforced. The actual methods of medical inspection at New York in order to deal efficiently with so vast a number of incomers must be ably directed and well carried out, and the Public Health and Marine Hospital Service, which is responsible for all details, leaves nothing to chance. Inspection of immigrants to America virtually begins in the country which the immigrants are quitting. Steamship authorities at the port of embarkation subject the would-be immigrant to a fairly strict medical scrutiny. The first-class lines, the German and English lines in particular, examine immigrants carefully and with due regard to the laws of the United States. The manifest indicates that an immigrant has not been at any time in prison, or in an almshouse, or in an institution or in a hospital for the care and treatment of the insane, what the alien's condition of health is, whether deformed or crippled, and if so, for how long and from what cause. The master or first officer and the ship's surgeon are required to make affidavit before an immigration officer at the port of arrival that the manifests are to the best of their knowledge true and that none of the aliens belong to excluded classes. The State quarantine authorities board the ocean liners on entering New York harbour when the immigrants are inspected for quarantinable diseases. The ship is then boarded by officers of the Public Health and Marine Hospital Service. The cabin passengers are first examined, special attention being paid to the second cabin, it having been ascertained that this part of the vessel is used more than occasionally in order to evade close inspection. After the cabin passengers have been examined the ship's surgeon reports any cases of sickness in the ship's hospital. Such cases are then examined by the medical inspectors who arrange for their transfer, if thought advisable, from the ship to the immigrant hospital. Immigrants are then conveyed from the ship to the immigrant station on Ellis Island where the main and most arduous portion of the medical inspection is carried out. The medical examination is conducted according to a

system which is the result of many years of development. The medical men work in pairs and divide between them the inspection of a group of immigrants. The immigrants coming in single file are rapidly examined for certain obvious defects by the first medical man. The second medical man, placed about 30 feet from the first, disregards those points of the examination which by agreement have been entrusted to his colleague and has a little more time in which to make his scrutiny as the immigrants reach him somewhat separated owing to their detention by the first medical man. Also, the file of immigrants makes a right angle turn just as it reaches the second medical man which enables this observer to examine the sides and backs of the immigrants in the shortest time possible. After the last alien in line has passed the second medical man the suspected ones who have been turned aside from the file are thoroughly examined and those suffering from a loathsome or dangerous contagious disease are certified and sent to a board of special inquiry. Those not deemed fit to travel are sent to the hospitals and those afflicted with some disability likely to make them a public charge are certified accordingly and sent to the board of special inquiry. Minor defects, such as anaemia, loss of an eye, loss of a finger, poor physique, and low stature, are recorded on the alien's card and he is allowed to go to the registry clerk and immigration inspector in charge of the manifest, who takes the defect into consideration as contributory evidence and may or may not send him to the board. A board of special inquiry according to the law of 1933 consists of three members, selected from the immigration officials in the service, as the Commissioner-General of Immigration, with the approval of the Secretary of Commerce and Labour, shall designate. The decision of any two members of a board is final but as in London an alien can appeal. To this "board of special inquiry" are sent the aliens certified by the medical officers as suffering from loathsome or dangerous contagious diseases, idiocy, epilepsy, and insanity. In cases so certified the medical certificate is equivalent to exclusion, the board simply applying the legal process. In cases in which the medical certificate denotes disability the board has full discretionary powers and in the majority of instances these are passed. Putting aside quarantinable diseases, trachoma is the most important malady with which immigrants to New York are afflicted on account of its frequency. Of the total number of cases of loathsome or contagious diseases found among immigrants nearly 90 per cent. were due to trachoma. The significance, therefore, of the freedom of immigrants at the Port of London, as noted by the representative of THE LANCET in his interesting article, is significant.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

SEVERAL interesting and encouraging circumstances were noted at the recent annual meeting of the court of governors of the University. The number of students continues to increase, the number of graduate and undergraduate students having risen from 286 in 1904-05 to 366 in 1905-06, whilst, in addition, about 500 other students are taking out courses in the University. This increase has caused some crowding in the class rooms and laboratories and has made still more evident the necessity for further extensions. The engineering department is already installed at Bournebrook and the new block for physics and chemistry will be erected there as rapidly as possible, but cannot be finished for 18 months or two years. The new pathological department which faces Great Charles-street is practically complete and will be open in the next session. It includes new laboratories, class rooms, and research rooms and it will give unequalled facilities for undergraduate and post-graduate work. During the year the University has received by bequests and gifts over £100,000 and the whole of the sum has been bequeathed or given for definite purposes. £50,000 from an anonymous donor are to be devoted to the buildings at Bournebrook; £20,000 from the Feeney bequest for the maintenance of a professor in some

¹ Dr. Allan McLaughlin of the Public Health and Marine Hospital Service has contributed a series of papers on the alien question in America to the *Popular Science Monthly*, which those interested in the question and desirous of fuller information should read.

legislator. The activity of the wine growers was at least equal to that of the temperance reformers. The fortunate circumstance is that in this instance the interests of the cultivator, the trade, and the temperance reformers all coincided. The last clamoured for cheap wine so as to prevent drunkenness; the wine grower and merchant replied that the cheap wine was there in over-abundance but the *octroi*, or the town dues system of local taxation, so increased the cost of wine, at least in towns and especially in Paris, that it had to be sold at a comparatively high price. Consequently the poorer classes still drank impure spirits, which did not cost more than pure wine, and became the victims of alcoholism. Obviously the thing to do was to abolish the *octroi* but this would be little short of a revolution in local finance. The duty charged on wine entering a town represents from one-fifth to one-third of the entire *octroi* receipts, which are the principal municipal receipts. If in Great Britain Parliament proposed to abolish a fifth or a quarter of the existing local rates and taxes the difficulty of replacing such sources of revenue would strangely perplex the local authorities. Yet, incredible as it may seem, this is precisely what has been done in Paris.

The Government and Parliament certainly did not contemplate or attempt to enact so complete and radical a measure. It is precisely because the Paris municipality, both by the opinions of its councillors and its acts and resolutions, indicates what the Parliament and legislature of the future will be like that the proceedings of the Paris Municipal Council are watched with such keen interest by thoughtful politicians all over the world. Indeed, before the legislature of the country could be persuaded to do anything at all many years were lost in what seemed at the time to be but futile discussions. Moreover, the question of abolishing local taxation on wine was complicated with the desire expressed in some quarters to do away altogether with the *octroi* or town dues as the principal means of raising revenue for local government purposes. So far back as Jan. 20th, 1791, the Constituent Assembly had proclaimed the abolition of *octrois* and this decree was carried out amid much rejoicing on the ensuing May 1st. Direct taxation replaced this form of indirect taxation but in the year VII. the *octroi* was hypocritically re-established at Paris under the pretext of obtaining means to defray the cost of poor relief. Under Napoleon Bonaparte, and by the Law of the 4th Frimaire year IX., the *octroi* was not only re-established for all towns of more than 4000 inhabitants but orders were given that 20 per cent. of the proceeds were to be paid over to the national exchequer. The *octroi*, however, was never popular and one of the principal cries during the revolution of 1848 was "Long live reform and down with the *octroi*." All that was then done, however, was to reduce the *octroi* duty on meat and wine. The importance from the public health point of view of this reform needs no explanation. The people's food-supply must be cheap if it is desirable to mitigate the evil effects of low wages and poverty, and the *octroi* duty is principally levied on the food sent into towns. It is, indeed, curious that in spite of numerous popular uprisings and revolutions the *octroi* duty still subsists in France and Italy, though it has disappeared in most other countries, notably in England, Switzerland, Sweden, and Denmark. In Belgium it was abolished in 1860, in Holland in 1865, in Spain in 1869, and in Germany in 1875. So deeply are the people interested in the abolition of the *octroi* that the desire to effect this reform constituted a dramatic episode of the last struggle of the Second Republic. After the *coup d'état* of Dec. 2nd, 1851, the 60 members of Parliament who had escaped arrest met in the house of Michel de Bourges on Dec. 3rd, and on the proposition of Victor Hugo issued the following decree:—

The Representatives who remain free decree: The *octrois* are abolished throughout the territory of the Republic.
Enacted at the permanent sitting of the 3rd December, 1851.

Half a century had to elapse, an empire rose and fell, a third Republic came into existence, the markets had to be overstocked with wine, and sanitary reformers had to discover that with cheap wine there was less drunkenness before a portion—only a portion—of the above decree could be practically applied.

In the early "eighties" the matter came frequently before the French Parliament and in 1887 M. Fallières, now President of the Republic but at that time Minister of Agriculture, ordered a special inquiry to be made. In 1889, so as to reduce the cost of food, a proposal was introduced by M. Yves-Guyot to give the communes the right to replace

town dues by direct taxation but the project fell through. In 1893, however, M. Guillaumon and M. Guillemet brought forward a similar Bill and, as an electoral manoeuvre, it was carried in the Lower House. The fact that the question of abolishing the *octroi* is as a rule raised just before a general election shows how popular is the proposal. It stands to reason that the mass of the people are interested in obtaining cheap food, and in this they are approved by all sanitary reformers. When, however, the Bill came before the Senate it only appointed a commission under the presidency of M. Bardoux. The report of this commission slept in the pigeon-holes for four years, and if the Chambers elected in 1893 had not voted in November, 1895, a special law in favour of abolishing taxes on "hygienic drinks" it might have been there still. Briefly, the position was that the Senate approved, as a temperance measure, the abolition of *octroi* duties on "hygienic drinks," that is on wine, beer, cider, perry, and mead; but the Senate was opposed to the total abolition of the *octrois*. The Lower House, on the contrary, favoured the total suppression of the *octrois* and accepted the reduction of the *octroi* duties on "hygienic drinks" as a step in that direction. It was in this spirit that the law of Dec. 29th, 1897, was adopted. This law is of such importance that it may be well to give the precise text of the principal clauses. They are as follows:—

The Senate and the Chamber of Deputies have adopted, the President of the Republic promulgates the following Law:—

Article one.—All communes shall be authorised to suppress their *octroi* duties on hygienic drinks (wines, ciders, perry, meads, beers, and mineral waters) from the 31st of December of the year that shall follow that during which the present law shall be promulgated. In default of the total suppression the communes shall be compelled to lower the existing tariffs within the limits specified in Article 2.

Article two.—In communes which shall continue to tax hygienic drinks such duties must not exceed the following tariff.

For wine in barrels or bottles per hectolitre.

In agglomerations:	Fr. c.
• Of less than 6000 inhabitants	0 55
• 6,001 to 10,000 inhabitants	0 85
• 10,001 „ 15,000 „	1 15
• 15,001 „ 20,000 „	1 40
• 20,001 „ 30,000 „	1 70
• 30,001 „ 50,000 „	2 0
From 50,001 inhabitants upwards	2 25

but for Paris 4 francs.

The *octroi* duty on wine in Paris was 10 fr. 62 c. per hectolitre and it yielded an income of more than £2,050,000 per annum. M. de Selves, Prefect of the Seine, reported that by reducing this tax to 4 fr. the loss of income would amount to £1,280,000 or £1,400,000, including the reduction on beer, cider, &c. If, on the other hand, the municipality of Paris availed itself of the faculty granted by the law to abolish entirely all taxes on "hygienic drinks," the loss to the local revenue would amount to £2,296,000, or about a third of the annual income derived from the *octroi*. It is this latter course which the municipality elected to follow, and the consequences of this stupendous measure affect so many conditions bearing upon the public health that they must be examined in detail. In 1897 the Paris *octroi* produced in round figures £6,200,000; but with the proposed reductions it would only yield about £4,400,000 in spite of the increase of population. This gives some idea of the sacrifice which has been made so as to remove the *octroi* dues on "hygienic drinks."

(To be continued.)

IMMIGRATION INTO THE UNITED STATES:

THE MEDICAL INSPECTION OF IMMIGRANTS AT NEW YORK.

(FROM A NEW YORK CORRESPONDENT.)

THE article on the alien question, with special reference to medical inspection, which recently appeared in THE LANCET has interest for all who reside in New York, especially for those who have a knowledge of the methods of medical inspection of aliens at the port of New York, the largest immigration port of the world. By far the greater number of those who desire to make the United States their home proceed to New York. An average of more than 2000 daily arrive there from Europe and up

Mr. William Johnston. The buildings are situated on the east side of the Thompson-Yates Laboratories which they immediately adjoin. The basement is devoted to comparative pathology and is under the control of Dr. H. E. Annett. The ground floor is devoted to tropical medicine and is presided over by Professor R. Ross, F.R.S. The first floor is set apart for the study of experimental medicine, including experimental investigation in medicine, pathology, physiology, bacteriology, and allied subjects, under the superintendence of the professor of physiology and the professor of pathology; one set of rooms is devoted exclusively to cancer research, under the direction of Mr. J. E. S. Moore. The second floor is assigned to bio-chemistry and is presided over by Professor Benjamin Moore. The laboratories of tropical medicine are contained in a large room about 95 feet long and 35 feet broad. The clinical work of the school is carried on at the tropical ward of the Royal Southern Hospital which, from its position near the docks, had since its foundation been largely frequented by cases of malaria and other tropical diseases. One of the physicians of the hospital was always in charge of the tropical ward and devoted his attention to the treatment of the cases and the clinical teaching of the students. There are special clinical laboratories attached to the tropical ward and the students also have access to the general pathological laboratory of the hospital. The Government voted a grant to the school of £500 per annum for five years from Jan. 1st, 1905, which enabled the staff of the school to be increased. The University of Liverpool had also made a grant of £200 per annum from Oct. 1st last. Subscriptions had come in very liberally from the general public, but the extensive scope of the trypanosomiasis research work undertaken by the school in connexion with the Congo sleeping sickness expedition had entailed heavy expenditure which had seriously crippled the funds at the disposal of the committee, with the result that the school entered on the present year with a deficit of nearly £190. During the past year 31 students had attended the school, including officers of the Colonial Medical Service and the Indian Medical Service.

Another Death from Anthrax in Liverpool.

The Liverpool coroner held an inquest on Feb. 28th on the body of a dock labourer, aged 43 years, who died in peculiar circumstances. The deceased complained of a swelling on the right side of the neck on Feb. 22nd and although it increased in size he went to work on the following morning. He became seriously ill on Feb. 24th and died on Feb. 26th. The necropsy revealed the fact that death was due to anthrax. The evidence showed that the deceased was usually engaged at steamers arriving from Mediterranean ports; these vessels occasionally carried hides but had not done so this year. The medical evidence was to the effect that the deceased probably contracted anthrax through touching leather on a passing wagon with his hand and then rubbing or scratching his neck. A verdict of "Death from anthrax" was recorded and the jury added a rider to the effect that vessels should be thoroughly disinfected after carrying hides and that workmen engaged in handling hide cargoes should wear gloves. This is the second death occurring in Liverpool within a few months due to anthrax.

Cattle Cake and the Spread of Anthrax.

Professor Penberthy, of the Royal Veterinary College, London, lectured on anthrax to a meeting of farmers held on Feb. 19th at Knutsford. He referred to the increase in the number of cases of anthrax in Cheshire and said that the cause for some of the alarm was apparent rather than real, as the returns showed that in most cases only one animal was affected in any particular outbreak. They were bound to admit that anthrax was introduced into this country from abroad in artificial and natural foods. But it was almost impossible for farming and breeding operations to be carried on here without the use of foreign cake, &c. The only measure that seemed to him at all practicable to prevent the spread of the disease was that a guarantee should be obtained from the manufacturers that the cake during the process of manufacture had been subjected to a temperature sufficiently high to kill anthrax germs.

New Cottage Hospital at Hoylake.

On Feb. 17th the Hoylake and West Kirby Cottage Hospital, which has been provided in Church-road, Hoylake, as a memorial to the late Queen Victoria, was opened by Mrs. W. H. Lever in the presence of a large gathering of the

subscribers. The committee which has had charge of the movement to furnish the district with the cottage hospital—the necessity for which had been keenly felt for a long time—has acquired and adapted for the purpose a large dwelling-house which has been amply furnished. Six beds have been installed, three for males and three for females. Accommodation is also provided on the premises for the matron and district nurse, and altogether the institution has been equipped so as to meet the requirements of the neighbourhood.

Nursing in Cheshire.

Lady Stanley of Alderley and members of other county families in Cheshire are taking up the question of a county nursing association. A private meeting has been held at Alderley Park, when a proposition was carried in favour of the formation of a society to procure that object. Colonel Dixon, the chairman of the Cheshire county council, and Mr. F. Vacher, the medical officer of health of the county, are associated with the movement. The Cheshire county council will be asked for scholarships and grants in aid of the scheme.

March 6th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Trained Nurses' Institution and its District Nursing Branch.

THE twenty-seventh annual report of the Leeds District Nursing Association has just been issued and shows, as it has done year by year, a steady growth in the amount of work accomplished. The special work done consists in the nursing of the poor in their own homes. Needless to say, the association will not undertake the nursing of any patients who are not under the care of a medical man, either a private practitioner or one of the resident medical officers of the dispensary. During last year 60,021 visits have been paid by the nurses to 3691 patients; this indicates an increase in the number of patients visited of 232. In respect of an annual subscription from the dispensary of £100 the association provides that institution with the services of a nurse who devotes all her time to the work. In this she attends on the honorary and resident staff during the time they are seeing out-patients and assists in the dressing of patients and during operations. At one of the branch homes patients who are under the care of medical men have minor dressings attended to and services of this kind have been rendered on 1594 occasions. The report sets out that the sum of £47 19s. 2d. has been spent on tram and railway fares and that it would be a material advantage if the corporation would grant the free use of the trams to the nurses who are engaged in this truly public service. The staff now consists of two superintendents, 20 district nurses, and one nurse attached to the dispensary. During the past year a special effort has been made to raise a sum of £10,000 and about one-half of that amount has now been obtained. This fund is required for the enlargement of three of the homes and for a sum for current expenses to replace the Jubilee money which is now nearly exhausted. It is interesting to know how this institution came into being. Some 20 years ago, at a time when there were very few trained nurses in Leeds, and at a time, indeed, when neither in Leeds nor elsewhere was there anything like the demand for them there now is, a meeting was held of those interested in the subject and it was decided to start the "Trained Nurses' Institution." By voluntary contributions a sum of about £5600 was collected and from its initiation the institution has flourished. The objects aimed at were two—firstly, to have at the service of the public an institution from which properly trained nurses could be obtained by those who were in a position to pay for them; and, secondly, to secure funds in order that an allied institution might be developed so that skilled nursing might be brought gratuitously to the homes of the poor. Both these objects have been achieved. The report of the parent institution for last year, which is the thirtieth, states that the desire of the committee has always been to keep the fees charged as low as possible so as to meet the needs of all and yet to make the institution self-supporting. The staff of the Trained Nurses' Institution consists of Miss Dawson, who has acted as superintendent from its commencement and has during that time had Miss Cracken-thorpe as assistant, and 85 nurses. All the nurses are

scientific subject connected with the trades of Birmingham; £10,000 from Mr. O. Copeley Harding, on behalf of his mother, sisters, and himself, and in memory of the late Mr. Charles Harding, for the purpose of building a library at Bournebrook; £100 from Miss Annette Harding for the purchase of books for the Faculty of Arts; and £100 from Professor and Mrs. Fiedler, also devoted to the Arts Faculty. An open classical scholarship of £40 per annum to be called the George Henry Marshall scholarship and a prize of £10 per annum to be called the George Henry Marshall prize, for encouragement of research in ophthalmology, have been founded by the sons of the late Dr. G. H. Marshall in his memory. £500 have been received from Mr. Francis W. W. Mitchell for the fund for the University Library of Music, £100 from Mr. George Hookham, and £25 from the late Mr. John Feeney for the same purpose. The Vice-Chancellor (Alderman O. G. Beale), who presided at the meeting, spoke hopefully of the future, pointing out that although much more money would be needed in the future to enable the University to hold and to advance the high position it had gained, experience of the past pointed to the means being forthcoming as necessity for them arose. The Chancellor of the University (Mr. Chamberlain) could not leave London to be present at the meeting and the Principal (Sir Oliver Lodge) has not yet returned from Italy but it is hoped that he will be back at the commencement of the summer session.—Up to the present the athletic club of the University has not included golf as one of its sub-sections but at an enthusiastic meeting held the other day it was decided that the time had come when a golf club might reasonably be formed. The Principal was elected President and Mr. H. G. Barling (the Dean of the medical school) and Dr. R. F. C. Leith were appointed Vice-Presidents.

Convalescent Homes.

Forty years ago a meeting was held in the town hall of Birmingham at which it was determined to establish a sanatorium in the vicinity and Sparkhill became the first site. But this first home of the institution was only three miles from the centre of the town and was soon encroached upon by the rapid extension of the town boundaries. It then became necessary to secure a more distant site and a spot was chosen on the brow of a hill at Blackwell, within easy distance of the station. The sanatorium built there faces south and the inmates enjoy beautiful views across the undulating country extending to Malvern, Woodbury, and the Olee Hills. The building was opened in 1873 but it has been found advisable to enlarge it and it will now accommodate 150 patients. The situation is beautiful and healthy but if its invaluable work is to be continued and extended more funds must be obtained, and, unfortunately, at the time these funds are especially needed the revised method of distributing the Hospital Saturday collection has diminished the income by £300.—The need for increased support was also referred to at the annual meeting of the Cotswold Convalescent Home which receives about 236 patients each year. The honorary secretary (Mr. J. O. Tinson) pointed out that the subscriptions were fairly maintained but that they did not increase in proportion with the increase of work and higher maintenance charges.

Local Health Reports.

The report of the health committee to the city council is extremely satisfactory, for whilst the birth-rate in 1905 is the lowest on record (29·2 per 1000) so also is the death-rate (16·1 per 1000). Moreover, both birth-rate and death-rate compare very favourably with the rates of many other large towns. The satisfactory condition of the death-rate appears to be due to the absence of any serious epidemic of summer diarrhoea and to the relatively slight prevalence of the more common epidemic diseases. It is interesting to note that the mortality-rate both for scarlet fever (3·1 per cent.) and diphtheria (14 per cent.) was reduced as compared with the preceding year, although the absolute number of cases of both diseases was greater than in the preceding year, and it is suggested that the reduced diphtheria mortality is due to a larger number of patients having been treated in hospital. The authorities and the city are certainly to be congratulated upon the slight prevalence of typhoid fever, only 209 cases having been reported as compared with an average of 547 in the previous ten years and it can only be regretted that the mortality remains the same (18 per cent.). Efforts were made to deal more vigorously and successfully with tuberculosis, which caused 999 deaths. Medical

men were asked to notify voluntarily cases of pulmonary tuberculosis in an infectious condition and 666 cases were notified. All were visited and instructions were given to prevent the spreading of the disease both at home and out of doors. In all cases after death disinfection of the home of the patient is carried out and it is hoped that useful results may be secured. As a precautionary measure and in view of certain evidence which has come before him the medical officer of health has issued a circular requesting all medical practitioners to notify to him all cases of cerebro-spinal meningitis. It is most important that such cases should be promptly notified and the usual notification fee will be paid. Sutton Coldfield still retains its record as a most healthy suburb. Its birth-rate for 1905 was below the average (19·9). The total number of births was 368 and more males than females were born, though the excess (28) was not so great as in the preceding year. The death-rate was the lowest on record for the town, 9·19, and 40 of the total deaths occurred in the cases of people over 65 years old. The infant mortality-rate was only 73 per 1000, whilst in 1904 it was 135. In Bromsgrove also not only has the year been healthy but the birth-rate has been low, as in Sutton Coldfield and Birmingham (26·98). The death-rate was 10·5, whilst the average for the previous ten years is 16·3. The infant mortality rate was 69 per 1000. The zymotic death-rate was 0·35 per 1000 and only six cases of infectious disease were notified during the year. The monthly report of the Oldbury medical officer of health (Mr. G. B. Buttery) shows an increased death-rate (18·1), as contrasted with 17·2 for the previous month. In the Walsall rural district the death-rate was very low (8·8) and in the parish of Pelsall not a single death occurred.

Mortuary Accommodation.

Birmingham is at last to have a central mortuary. Such accommodation has been needed for a long time and it is surprising that the watch committee has not provided for the necessity sooner. The district mortuary provisions are very primitive and very frequently unsatisfactory and inconvenient. The building now to be erected will cost £2723 and it will provide accommodation for 13 bodies and facilities for the proper performance of post-mortem examinations. It is intended that in cases of sudden death occurring in public places the bodies shall, if possible, be carried to the central mortuary. This will be a great convenience to the coroner and the juryman and will save the expense of conveying the juryman to all parts of the city.

Water-supply.

It is some compensation for the miserable weather conditions of the past month to find that the water-supply of the city has been largely increased. A year ago the total amount of water in the storage reservoirs was 4,631,000,000 gallons and now it is 10,097,000,000 gallons—that is, it is within 1,840,000,000 gallons of the total storage capacity. Dr. J. Robertson (the medical officer of health) reports that it is pure and soft and distinctly less coloured than in the previous months. Under these conditions we can look forward to, and hope for, a fine and long summer without any fear of the water-supply proving insufficient.

March 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool School of Tropical Medicine: Annual Report.

THE seventh annual report of the Liverpool School of Tropical Medicine was issued last month. The committee stated that it is again able to record that in the past year the school had continued to receive generous support from the public and had been able to carry on its work without in any way relaxing its efforts. At the same time it must be borne in mind that the expenses of the school were increasing in a larger proportion than its receipts owing to the great development of research work already begun as well as the opening up of new fields of research. It was with the deepest regret that the committee learned of the sudden death of Dr. J. E. Dutton, Walter Myers Fellow, at Kosengo, on the Congo, while actively engaged in the investigation of trypanosomiasis and tick fever. The Johnston laboratories of the University of Liverpool, where accommodation for the research work and teaching of the school was provided, were presented to the University by

of female general paralytics exceeded that of the men. He considered this a bad sign of the moral status and mode of life of the class from which these patients came and it was a sidelight of a very depressing character on our social life. As showing the great difference in the local distribution of this particular disease he noted that in Ireland with a population of 4,500,000 only 52 such cases were sent to all the Irish asylums. Great cities, vice, dissipation, and undue excitement were the breeders of this disease. He then proceeded to refer to the investigations of Dr. W. Ford Robertson and of Dr. G. Douglas MacRae into the etiology of general paralysis. The record of this work is to be found in the summaries of the Morison lectures which have recently appeared in *THE LANCET*.¹ Dr. Clouston considered that these investigators had proved that the immediate cause of the disease was a microbe which acted specially on brains that had previously been weakened by dissipation and poisoning. He had long hesitated as to the sufficiency of these facts to prove their theory but the new evidence which they had produced this year was too strong for him and he was now satisfied that they had discovered the true nature of the disease. The cheering part of the investigation was the hope it held out that a cure might be found in the future. He did not expect that the microbe theory would be at once accepted by the whole medical profession for no such radical change of view was ever received without much questioning. Dr. Clouston then dealt with a subject on which he annually lays emphasis—namely, the relation of alcohol to insanity. The number of admissions due wholly, or in part, to excess of alcohol was 110, or 25·7 per cent. This showed an increase on the average of the preceding five years. It was not satisfactory to find that this cause of mental disease in the women admitted had risen from an average of 16·2 in the previous five years to 22 per cent. It was satisfactory to note that while this was the case with the rate-paid class, with the private patients the alcoholic rate was 10 per cent. He held that it was incontestable that the alcoholic insanity rate was still far too high amongst all classes. There was room for many agencies in warning people with regard to the present and the far-reaching dangers of alcoholic excess. The young at the schools ought, he thought, to be taught more about it as a mere branch of knowledge. When the cases of admission were classed under the heads of mania and melancholia the melancholic phase was found greatly to predominate. This was the reverse of what their experience was 30 years ago and he thought it was to be attributed to the lessened nervous tone which resulted from the epidemics of influenza which had passed over the country. In concluding his report he adhered to his previously expressed opinion that the Royal Infirmary or the parish council should provide hospital accommodation for the early treatment of transient uncertified cases of mental disease. He thought that the day might come when insanity might be added to the notifiable diseases as one means of eliminating the unit from marriage.

The Carnegie Trust.

The report of the executive committee of this trust for last year has been issued. There are many points in it which need not be mentioned here but there are others of considerable medical interest. The total payments for the year to the four Scottish universities were: St. Andrews, £3343; Glasgow, £16,495; Aberdeen, £13,631; and Edinburgh, £22,550. These payments include grants for buildings, endowments, apparatus, &c. Amongst the educational institutions outside the universities which have received grants are the School of Medicine of the Royal Colleges, Edinburgh; the Edinburgh Medical College for Women; and Anderson's College Medical School, Glasgow. It will be remembered that the Carnegie Trust took over the Research Laboratory of the Royal College of Physicians of Edinburgh so that the report has a section devoted to the report by the superintendent on the research work done in the laboratory during the year. There were 35 workers engaged on 49 investigations and 19 papers have been published from the laboratory during the year. The laboratory cost for the year £1217. Of this sum £750 were contributed by the Royal College of Physicians and £200 by the Royal College of Surgeons. A sum of £90 was earned by reporting, so that the sum spent by the trust was £265. The great part of the report is devoted to the question of the payment of students'

class fees. This question need not be gone into in detail here but it may be stated roughly that the demands upon this section of the trust have become so large that the trust is already face to face with the necessity of having to alter the conditions under which it has so far paid class fees. There has been a much greater call on this portion of the trust by an increase during the year of 906 beneficiaries and the average cost of each beneficiary has been greater from two causes: first, because students have taken a larger number of classes and, secondly, because the class fees in some instances have been materially raised. The sums paid for fees are large: For the summer session of 1905 they amounted to £15,243 for 1631 students; and for the winter session, 1905-06, to £32,263 on behalf of 3184 students. The amounts paid in fees in the Faculty of Medicine are much larger in Edinburgh, Glasgow, and Aberdeen than in the other faculties, while in St. Andrews the sum amounts to about half the sum paid to the Faculty of Arts. The sums are as follows: St. Andrews, £1371; Glasgow, £7037; Aberdeen, £5517; and Edinburgh, £10,916. In view of the demands made upon this fund there is no wonder that the public and the press have reopened the question of the desirability of having the fund for the youth of the country. It is evidently clear that it is taken advantage of by persons for whom it was not intended. The section of the trust dealing with endowment and equipment has been, and will continue to be, invaluable to the universities and to the other institutions sharing the benefits with them. The trust is in communication with the universities as to the best measures to take with regard to class fees.

Pathological Department of the Edinburgh Royal Infirmary.

There are so far only four candidates for the three vacant posts in this department. They are Dr. W. E. Carnegie Dickson, assistant in the University of Edinburgh pathological department; Dr. W. T. Ritchie, pathologist to Leith Hospital; Mr. Henry Wade, conservator of the Museum of the Royal College of Surgeons of Edinburgh; and Dr. Ian Struthers Stewart, a former clinical pathologist at the Banchory Sanatorium. Dr. Dickson and Mr. Wade apply to be assistants for morbid anatomy and Dr. Ritchie and Dr. Stewart for clinical pathology. It is to be regretted that there are not more candidates for these posts from amongst the younger men who are looking forward to being physicians to the infirmary. It will not be to the benefit of either medicine or pathology if there should be a generation of hospital physicians none of whom has had the training which can only be got in the post-mortem room. At present there is a trend to divorce pathology from medicine but that tendency is temporary and is deplored by none more than by the pathologists themselves who realise the disadvantage of being excluded from the practical clinical side of medicine.

Science and the Public.

Last week under the auspices of the Glasgow centre of the Royal Scottish Geographical Society Major Ronald Ross of the University of Liverpool delivered a lecture on the subject of "Science and the Public." Major Ross said that his attention was first called to this subject in connexion with malaria which was the principal enemy of geographers. Science had shown how that widespread disease might be avoided and even in some localities extirpated, but the public would not act on what science taught them. He went on to describe with the aid of lantern slides what had been done to free mankind from malaria and yellow fever and contended that the sooner the public altered its apathetic attitude towards such scientific results the better would it be for the world at large.

A New Reception House for Partick.

A new reception house in connexion with Knightswood Fever Hospital has just been opened. The building, which is among the first of its kind in Scotland, is of one storey and is designed in such a manner that from a central administrative department there radiate four different houses which can be occupied by four different families. Each house has a living room, two bedrooms, and a bathroom, and has an independent entrance door and airing ground. One of the houses, instead of having two bedrooms, has one dormitory, and this house can be utilised if required for men only in the event of an epidemic breaking out in a model lodging-house. A special entrance is provided from the main road to the administrative department. This type of reception

¹ *THE LANCET*, Feb. 2nd (p. 334) and 10th (p. 335), 1905.

trained at general hospitals which lay themselves out for the training of nurses for a period of two years, and at present 16 nurses are undergoing this training. During 1905 717 cases have been undertaken and 152 have had to be refused. In almost all cases the nurses, who are engaged by the week, live at the houses of the patients. The central home has accommodation for 16 nurses and both this and the quarantine and convalescent home at Headingley, which accommodates nine, are freehold and the property of the institution. The dividends from invested funds, which are being increased year by year, amounted in 1905 to £311. A sinking fund has been formed so that those nurses who receive pensions from the Royal National Pension Fund for Nurses have their pensions supplemented by an annual bonus of £10. The District Nursing Association, which, as already stated, was started as a branch of the parent institution about 27 years ago, fulfils the second object of the originators of the scheme. It is subsidised by the parent institution. Last year £200 were contributed in this way and during the current year it has arranged to contribute £300. This sum, of course, forms but a small proportion of the income of the charitable branch, as it may be termed, for the District Nursing Institution has an annual subscription list amounting in 1905 to £1213. Last year there were received from the Workpeople's Hospital Fund a grant of £225; from the Trained Nurses' Institution, as just stated, a subsidy of £200; and sundry other sums brought the income from donations up to £700. From invested funds £149 were obtained, from rents of property owned by the institution £117, and from services rendered to the Public Dispensary £110. The total income last year was therefore about £2300. The expenditure was £2405, which, considering the amount and quality of the work done, is certainly small. It is of interest to note how the various cases attended to have been brought to the notice of the institution. Of the 3601 cases attended to last year 288 were on the books at the end of 1904; of the new cases 2088 were attended to at the request of private medical men, 479 at that of the resident staff of the dispensary, in 395 cases the request came from neighbours, in 83 from clergymen and other visitors, 202 were former in-patients of the infirmary, nine old in-patients of the Hospital for Women and Children, and the remainder were visited at the request of the Poor-law medical men and the other officials of the guardians. Of the new cases visited 2044 were medical, 890 were surgical and included 247 cases of operation, and 379 were cases of diseases peculiar to women, including complications after confinement.

Appointment at the Hospital for Women and Children.

Consequent on the promotion of Professor O. J. Wright to the consulting staff, and as a result of the new arrangements which have recently been remarked on in this column, a new appointment of assistant surgeon has been made at this institution. To this position the special election committee has appointed Dr. Carlton Oldfield. Dr. Oldfield was a distinguished Leeds student and after taking his qualification acted as house surgeon to the infirmary.

March 5th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Aberystwyth Board of Guardians and their Medical Officer.

NEARLY six weeks ago the Aberystwyth guardians sent to the Local Government Board a series of resolutions in explanation of their refusal to increase the salary of Mr. G. R. E. Bonsall who was receiving £30 per annum to include medicines. No answer having come to hand, at a meeting of the guardians held on March 5th a motion was placed on the agenda to the effect that a month's notice should be given to Mr. Bonsall to terminate his services as district medical officer and public vaccinator. When this motion was reached the guardian in whose name it stood asked leave to withdraw it in order that it might be amended. The chairman would probably have ruled it out of order had it been proposed and for the edification of the members read out the following:—

Medical Officers Order, 1857, Art. I.: Every medical officer of the workhouse duly qualified at the time of his appointment according to the regulations of the Poor-law Board then in force shall hold his office until he shall die or resign, or be proved to be insane by evidence which the Poor-law Board shall deem sufficient, or become legally disqualified to hold office, or be removed by the Poor-law Board.

Mr. Joseph Parry, a country guardian, then gave notice that at the next meeting he would move that Mr. Bonsall be re-appointed to the post which he had resigned at a salary of £40 instead of £30. In the meantime the infirmary board has agreed that Mr. R. T. E. Edwards, the house surgeon, shall attend cases of emergency at the workhouse when asked to do so by the master.

Insanitary Conditions at Bridgend.

At a meeting of the sanitary committee of the Glamorganshire county council held on March 2nd, Dr. W. Williams (medical officer of health) reported that owing to the fact of enteric fever having repeatedly been prevalent in the Bridgend urban district the council had ordered a house-to-house investigation to be made by an experienced sanitary inspector. That official had inspected 241 houses and of this number no less than 224 had defective drains.

Appointment of an Analyst for Bristol.

There were 30 applicants for the post of city analyst for Bristol. The commencing salary is £450, rising by annual increments of £25 to £600. The joint committee of the watch and health committees on Feb. 27th selected Mr. Edward Russell, B.Sc., F.I.O., F.O.S., public analyst for Portsmouth, and he will therefore be recommended for the appointment at the next meeting of the city council on March 13th.

Dogfish as Food.

Members of the Cornish county council and of other Cornish local authorities attended a dinner at Truro on Feb. 28th with a view to popularise dogfish as an article of food. A meeting of the sea fisheries committee, held earlier on the same day, had approved of the change of name from dogfish to flake, and after the dinner the company were unanimously of opinion that flake was a most excellent, nourishing, and agreeable form of food. It was stated that the demand for the fish was increasing steadily.

Dental Questions.

A joint meeting of the Western branch and the South Wales and Monmouthshire branch of the British Dental Association was held at Newport on Feb. 24th under the presidency of Mr. T. Gill Williams (Newport). Mr. Quintin Miller (Hereford) read a paper entitled "A Controversial Subject," dealing with provident dental surgeries at which the working-class could be treated at reduced fees. Mr. W. Jones Greer (Newport) and Mr. H. J. Thomas (Swansea) contributed papers on Cysts of the Jaws and Conclusions arrived at after Examining the Teeth of School Children. The meeting was followed by a dinner.

Prosecution under the Dentists Act.

At the Plymouth police court on Feb. 26th Mr. H. Drew, who is neither a legally qualified medical practitioner nor registered under the Dentists Act of 1878, was fined £5 and costs for using the letters D.D.S. after his name, implying that he was a person specially qualified to practise dentistry.

Royal West of England Sanatorium, Weston-super-Mare.

The thirty-sixth annual meeting of the subscribers of this institution was held on Feb. 24th. The medical report stated that 2529 patients (1460 men and 1069 women) had been admitted during 1905, showing an increase of 176 compared with 1904. The financial statement showed that the income amounted to £4116 and the expenditure was £4043.

March 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Annual Report of the Royal Edinburgh Asylum for the Insane.

Dr. T. S. Clouston in his annual report of the Royal Edinburgh Asylum for the Insane usually succeeds in making at least one point so prominent that it attracts public attention. This year his leading point is general paralysis. He has had an unprecedentedly high number of admissions of this disease during the year. They amounted to 64 and of these a further unparalleled experience was that 38 of them were females. When he was a young physician it was very rare indeed to see this disease in women. Of the female cases all save one were of the rate-paid class. Of 312 rate-paid admissions 18.6 per cent. were general paralyses, while of the 116 private patients only 5 per cent. suffered from that disease. This was the first time the number of admissions

of female general paralytics exceeded that of the men. He considered this a bad sign of the moral status and mode of life of the class from which these patients came and it was a sidelight of a very depressing character on our social life. As showing the great difference in the local distribution of this particular disease he noted that in Ireland with a population of 4,500,000 only 52 such cases were sent to all the Irish asylums. Great cities, vice, dissipation, and undue excitement were the breeders of this disease. He then proceeded to refer to the investigations of Dr. W. Ford Robertson and of Dr. G. Douglas MacRae into the etiology of general paralysis. The record of this work is to be found in the summaries of the Morison lectures which have recently appeared in *THE LANCET*.¹ Dr. Clouston considered that these investigators had proved that the immediate cause of the disease was a microbe which acted specially on brains that had previously been weakened by dissipation and poisoning. He had long hesitated as to the sufficiency of these facts to prove their theory but the new evidence which they had produced this year was too strong for him and he was now satisfied that they had discovered the true nature of the disease. The cheering part of the investigation was the hope it held out that a cure might be found in the future. He did not expect that the microbic theory would be at once accepted by the whole medical profession for no such radical change of view was ever received without much questioning. Dr. Clouston then dealt with a subject on which he annually lays emphasis—namely, the relation of alcohol to insanity. The number of admissions due wholly, or in part, to excess of alcohol was 110, or 25.7 per cent. This showed an increase on the average of the preceding five years. It was not satisfactory to find that this cause of mental disease in the women admitted had risen from an average of 16.2 in the previous five years to 22 per cent. It was satisfactory to note that while this was the case with the rate-paid class, with the private patients the alcoholic rate was 10 per cent. He held that it was incontestable that the alcoholic insanity rate was still far too high amongst all classes. There was room for many agencies in warning people with regard to the present and the far-reaching dangers of alcoholic excess. The young at the schools ought, he thought, to be taught more about it as a mere branch of knowledge. When the cases of admission were classed under the heads of mania and melancholia the melancholic phase was found greatly to predominate. This was the reverse of what their experience was 30 years ago and he thought it was to be attributed to the lessened nervous tone which resulted from the epidemics of influenza which had passed over the country. In concluding his report he adhered to his previously expressed opinion that the Royal Infirmary or the parish council should provide hospital accommodation for the early treatment of transient uncertified cases of mental disease. He thought that the day might come when insanity might be added to the notifiable diseases as one means of eliminating the unfit from marriage.

The Carnegie Trust.

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class fees. This question need not be gone into in detail here but it may be stated roughly that the demands upon this section of the trust have become so large that the trust is already face to face with the necessity of having to alter the conditions under which it has so far paid class fees. There has been a much greater call on this portion of the trust by an increase during the year of 906 beneficiaries and the average cost of each beneficiary has been greater from two causes: first, because students have taken a larger number of classes and, secondly, because the class fees in some instances have been materially raised. The sums paid for fees are large: For the summer session of 1905 they amounted to £15,243 for 1834 students; and for the winter session, 1905-06, to £32,268 on behalf of 3184 students. The amounts paid in fees in the Faculty of Medicine are much larger in Edinburgh, Glasgow, and Aberdeen than in the other faculties, while in St. Andrews the sum amounts to about half the sum paid to the Faculty of Arts. The sums are as follows: St. Andrews, £1371; Glasgow, £7037; Aberdeen, £5517; and Edinburgh, £10,918. In view of the demands made upon this fund there is no wonder that the public and the press have reopened the question of the desirability of having the fund for the youth of the country. It is evidently clear that it is taken advantage of by persons for whom it was not intended. The section of the trust dealing with endowment and equipment has been, and will continue to be, invaluable to the universities and to the other institutions sharing the benefits with them. The trust is in communication with the universities as to the best measures to take with regard to class fees.

Pathological Department of the Edinburgh Royal Infirmary.

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A New Reception House for Partick.

A new reception house in connexion with Knightswood Fever Hospital has just been opened. The building, which is among the first of its kind in Scotland, is of one storey and is designed in such a manner that from a central administrative department there radiate four different houses which can be occupied by four different families. Each house has a living room, two bedrooms, and a bathroom, and has an independent entrance door and airing ground. One of the houses, instead of having two bedrooms, has one dormitory, and this house can be utilised if required for men only in the event of an epidemic breaking out in a model lodging-house. A special entrance is provided from the main road to the administrative department. This type of reception

¹ *THE LANCET*, Feb. 3rd (p. 334) and 10th (p. 396), 1906.

house is a great advance on the old type which exists in connexion with so many fever hospitals, where in times of pressure people under suspicion of suffering from different infectious disease have to be kept in the same reception house, with the result that in some cases people previously free from illness contract an infectious disease in the reception house.

March 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal University of Ireland.

FOR the vacant Senatorship of the Royal University of Ireland (owing to the resignation of his honour Judge Shaw, K.C.) there is to be an election in April and Dr. John Campbell, Belfast, President of the Royal University Graduates' Association, is a candidate. In his address just issued he says he is prepared to make the best of the Royal University until some more promising scheme of university education has been evolved. He is opposed to the establishment in Ireland alike of a sectarian college or university. He is in favour of extern examiners but will support any other method by which the confidence of students in the fairness of the examinations is likely to be maintained and he will endeavour to have the different colleges connected with the university fairly represented on the board of examiners. He is also of opinion that the university should have disciplinary powers enabling it to maintain order in meetings held within its walls and to punish students and graduates for conduct unbecoming the students and graduates of a university. If elected Dr. Campbell promises to do all he can to improve the position of the Royal University and of Irish education.

Queen's College, Belfast.

In the House of Commons on March 1st, in reply to a question asked by the late Chief Secretary for Ireland (Mr. Long), Mr. McKenna stated that a sum of £5400 was being taken in the Estimates for 1906-07 for buildings at Queen's College, Belfast, conditionally on an equal sum being appropriated to the same purpose from funds raised by public subscription. This grant will enable the chemical laboratory to be completed and, in addition, it will allow an enlargement of the physiological and pathological laboratories. It will also give two more lecture-rooms which are much needed.

Health of Belfast.

At the monthly meeting of the Belfast corporation, held on March 1st, it was reported that a sum of £55,429 had already been expended (up to Jan. 31st) on the new infectious diseases hospital and that it was estimated that to complete the building, including furnishing, a further sum of £19,590 would be required, making a total of £75,000. For the quarter ended Dec. 31st, 1905, there were 203 deaths of children under five years of age. Of these, 72 were over three months and under one year and 65 were over one year and under five years. Of the children under one year 50 per cent. were bottle-fed. The death-rate between Jan. 21st and Feb. 17th was 22·7 per 1000. There was a slight decrease in all the notifiable diseases except scarlet fever, diphtheria, and membranous croup. The number of cases of scarlet fever—though the disease is mild—still keeps large with a very small mortality. The deaths from whooping-cough have materially increased.

The Belfast Society for Nursing the Sick Poor.

At the annual meeting of this very deserving society, held in the City Hall, Belfast, on March 2nd, the report stated among other matters that 1136 cases had been nursed during the year 1905. The total income for 1905 was £1106 and the total expenditure £1184, leaving a balance on the wrong side of £78. Professor J. W. Byers, in supporting the adoption of the report, spoke of the great value to the general community in the aid afforded by this society in educating the poor in the subject of the prevention of disease. Apart altogether from teaching the laws by which the spread of infection could be controlled, their nurses could give those with whom they were brought in contact hints as to the proper feeding of infants and for the stamping out of consumption.

County Down Infirmary.

At a meeting of the committee of management held on

March 3rd the annual report for 1905 was read. The total income was £1820 3s. 1d. and the expenditure was £1814 11s. 8d., leaving a small balance of £5 11s. 5d. in hand. 501 patients were admitted during the year and these, with 40 remaining from the previous year, made a total of 541 treated in the 12 months ended Dec. 31st, 1905. There were 912 extern cases. Owing to the increase of tuberculous cases verandahs were suggested as being necessary with open shelters.

March 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Antidysenteric Serum.

AT a meeting of the Academy of Medicine held on Feb. 20th M. Vaillard and M. Dopfer communicated a paper in which they laid before the Academy the results which they had obtained in cases of bacillary dysentery by the use of a serum. This serum had been prepared by them at the Pasteur Institute from a horse which had been injected both hypodermically and intravenously with a culture containing both living dysenteric bacilli and their toxins. The serum was first tested experimentally on the rabbit and was found to be protective for a period not exceeding ten days, while it also manifested curative properties. It was then tested in human beings on 98 cases of varying severity and was found to have an almost immediate action on both the local and the general conditions of dysentery, for, within 24 hours after the injection of the serum, the colic, the tenesmus, and the extreme desire to go to stool either greatly diminished or absolutely disappeared. Moreover, the stools became faeculent and were reduced in number to one per diem. The general condition of the patients improved *pari passu* and in all the cases treated the duration of the disease was much shortened. In mild cases the patients were well in two or three days, in fairly severe cases in from three to four days, and in very severe cases in from four to six days. Of four patients who were considered as doomed three recovered in 8, 11, and 20 days respectively. The fourth died on the thirteenth day. The period of convalescence was rendered short and easy. Certain patients who had been treated in the usual way without improvement were submitted to the serum treatment and on the following day they showed marked improvement, while they very soon completely recovered. The earlier in the course of the disease that the serum is applied the better does it act. It exercises, however, a most favourable influence upon chronic cases in doses of 20, 30, or 60 cubic centimetres, according to the severity of the case. The dose can be repeated on the following day if the improvement is not very obvious and in extremely severe cases from 80 to 100 cubic centimetres can be injected on the first day and repeated if necessary on the following days. M. Vaillard and M. Dopfer are of opinion that the serum treatment of dysentery is incomparably superior to the other methods of treatment at present in use.

Serum Therapy in Typhoid Fever.

At the same meeting of the Academy of Medicine M. Brunon read a note upon the above subject. Out of one group of 100 children suffering from typhoid fever and treated by antityphoid serum there were four deaths and of these four one was only treated with serum in the last extremity. In another group of 82 children also suffering from typhoid fever and treated by ordinary methods there were 14 deaths. Both groups were treated in the same hospital. The patients treated with serum were also given hot or warm baths every three hours during the day and in the intervals between the baths they had wet packs round the thorax and abdomen. Their diet was liquid and plentiful. After an injection of serum the temperature generally rose from 0·5° to 1° C., which rise persisted for from two to five days. 50 patients who were injected in the first week of the disease all recovered; of 36 injected during the second week one died; and of 14 patients injected later than the second week three died. The mean duration of the illness was 18 days in the first batch, 20 days in the second, and 40 days in the remainder.

Extraction of a Foreign Body from the Right Bronchus by Direct Bronchoscopy.

At a meeting of the Society of Surgery held on Feb. 21st M. Picqué showed a 50 centime piece which M. Guisier had extracted from an adult patient under his care

by means of direct bronchoscopy. When extracted the coin had been in the respiratory tract for four weeks. Directly after its inspiration there had been an intense feeling of suffocation but this soon passed off. The patient felt no inconvenience from the coin until within a few days before he sought advice, which he did on account of pain, purulent sputum, and an attack of "fever." Radiography clearly showed the coin lying at the bifurcation of the right bronchus. Direct bronchoscopy confirmed this and M. Gulsez was able with ease to seize and to extract the coin by means of a special pair of forceps. Recovery was uneventful and M. Picqué showed the man at the meeting perfectly well.

Cæsarean Operation repeated in the Same Woman.

At the February meeting of the Society of Obstetrics, Gynecology, and Pædiatry M. Frühsholz read a paper on a case of Cæsarean operation repeated three times in the same woman. The woman had had two labours terminated by craniotomy and the third and fourth pregnancies resulted in Cæsarean operation. At the eighth month of the fifth pregnancy the waters broke spontaneously. A third Cæsarean operation was therefore carried out. Numerous adhesions were found between the uterus and the abdominal walls (*adhærents utero-parietales*) which were divided with the knife. The child, who was extracted alive, weighed 1600 grammes, and the placenta was implanted above and to the front. A sixth pregnancy terminated spontaneously by abortion. M. Frühsholz asked if it were possible that utero-parietal adhesions were the cause of the interruption of pregnancy before full term. He had collected various cases of Cæsarean operation repeated in one woman within the last few years. Contrary to the instance which had come under his own personal observation he found that in nearly all the other cases the weight of the children increased with each pregnancy terminated by a Cæsarean operation. The utero-parietal adhesions had been found in 30 cases out of 52. They constituted a kind of accidental hysterectomy which is in no way comparable to the operation of the same name. In some few cases these adhesions brought about premature labour or abortion, and as a rule these consequences were due to syphilis or albuminuria. In no case was difficulty of labour brought about by this special kind of hysterectomy and this was probably due to the fact that the uterus became fixed to the parietal wall when it was pregnant, whereas in operative gynecology it was fixed in the non-pregnant condition.

An Enucleable Cancer of the Kidney.

At a meeting of the Surgical Society held on Feb. 28th M. Richelot gave an account of the case of a woman, aged 60 years, who when seen in December last exhibited an enormous tumour of the abdomen. The tumour was well defined and very mobile as if it had a definite pedicle. M. Richelot at first took it for an ovarian cyst. Later, however, the patient suffered from frequent attacks of hæmaturia and he then thought that the growth might be one of the kidney. Laparotomy confirmed this idea and the growth was easily shelled out from its capsule. A histological examination made by M. Cornil showed that the growth was a cancer of the pelvis of the kidney, a condition which is extremely rare.

March 5th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Opening of the Kaiserin Friedrich Haus.

THE Kaiserin Friedrich Haus in Berlin, an institution for post-graduate study (*ärztliches Fortbildungswesen*), was formally opened on March 1st on the occasion of the silver wedding of the Emperor and the Empress. Post-graduate study has undergone great development in Germany during the last two years. Lectures and demonstrations which might be attended on payment of fees have for a long time been held at the universities during the vacations, but the present movement has for its object to provide general practitioners with special courses and lectures free of charge. The work is under the control of a central committee, which has its offices in Berlin, and includes members of the Government, the medical faculty of the university, and leading men of the profession. There are also in the larger towns local committees in connexion with the central committee. During her last illness the late Empress Frederick devoted considerable attention to the subject of post-graduate instruction for medical practitioners

and she decided to found an institution which should be a centre of such instruction; she accordingly bequeathed a large sum of money for the purpose, the remainder being raised by private subscription. In the Kaiserin Friedrich Haus there are lecture rooms, laboratories, a collection of medical and surgical instruments and apparatus, and a medical exhibition which is open to the general public and shows the advances that are being made in medical knowledge. The present Emperor and Empress are also interested in the matter and were present at the opening ceremony which was on an elaborate scale and of an impressive character. The Court and all the members of the Royal Family, the Ministers, various other members of the Government, and representatives respectively of the University, the city of Berlin, the civilian medical profession, and the army medical corps were in attendance. Sir Felix Semon represented King Edward, Dr. Blondel of Paris represented the medical profession of France, and Dr. von Gross that of Hungary. On the arrival of the Emperor and the Empress Professor von Bergmann read an address of welcome, thanking the Imperial Family for the interest which they had displayed in the advancement of medical science. Sir Felix Semon, Professor Loebker (President of the German Practitioners' Association), General Staff-Surgeon Dr. Schjerning, and the Prussian Minister of Education, Dr. Studt, also delivered addresses, to which the Emperor replied, expressing his satisfaction with the work which the committee had accomplished in carrying out the intentions of the Empress Frederick. The Emperor and his party then made a tour of the building under the guidance of Professor von Bergmann.

Alcoholism in Childhood.

An investigation on the subject of the consumption of alcoholic beverages by children was lately carried out in Nordhausen, a city famous for the production of a very popular liquor. It was found that of 49 boys who attended a certain school 38 had taken wine, 40 had taken spirits, and all had taken beer; of 28 schoolgirls, 27 had taken wine and 14 had taken spirits; 21 said that they liked beer; 14 used to drink it regularly to make themselves strong, as they expressed it; and 16 admitted that they had been intoxicated once or oftener, especially on the occasion of weddings, picnics, or birthday entertainments. In another school at Ortelburg in East Prussia the teacher lately discovered that a number of boys had in their possession bottles of spirits which had been given to them by their parents, and some boys were too worse for liquor before the beginning of lessons so that they had to be sent home.

March 5th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Mecca Pilgrimage.

THE returning pilgrims are now undergoing disinfection at Tor and this year's pilgrimage has so far been declared free from exotic diseases such as cholera and plague. This is a convenient time to draw attention to the present rules which govern the coming and going of Egyptian pilgrims to the holy places. Last year the numbers proceeding to Mecca were 38,170, including some 13,000 non-Egyptian pilgrims who went through the Suez Canal in quarantine, about 10,000 others travelling with first-class tickets who embarked at Suez, and the remainder were Egyptian pilgrims who also took steamers at Suez for Jeddah. All these, except 85, were duly accounted for on "the return" journey. No less than 88 of the Egyptians died on the journey and 37 died shortly after returning to Egypt, mostly from non-infectious diseases, but including one case of small-pox, one of typhus fever, and eight of dysentery and diarrhoea. 78 were found impersonating dead pilgrims or were furnished with passports which did not belong to them, but most of these were eventually traced and dealt with by the police. The number of Egyptian pilgrims registered in 1905 is far in excess of any former year, this being due to the better arrangements now prevailing. It is now ten years since the sanitary department, presided over by Sir Horace Pinching, with Dr. J. E. Creswell at Suez, as his local representative, decided to register formally all out-going pilgrims and to keep them under observation after their return for a period of seven days. These measures, which cannot be too highly praised, are in addition to the precautions taken by Dr. M. A. Ruffer and the quarantine board at Tor. So late as 1895, three hours

after a shipload of pilgrims had been landed at Suez, seven dead pilgrims were brought to the hospital mortuary gathered from the quay, railway station, and the streets of the town. The pilgrims freed from quarantine control were then allowed to disperse to their homes, whether suffering from diarrhoea or not. Readers must here be reminded that practically all the cholera epidemics from which Egypt has suffered in times past can be traced to infection introduced by returning pilgrims. It became necessary to revise the whole system of registration and passports to oblige the pilgrims to travel by one known route, to see that they were financially equipped for the journey, and to control the steamers by a set of regulations which limit the number of pilgrims to the capacity of each ship. The present system is as follows. An Egyptian desirous of making the pilgrimage must secure a special passport from the mudir of his district or the governor of his town. This passport contains a detailed description of the individual and spaces for receipts for quarantine fees and caution money deposited by the pilgrim. The man must then visit the sanitary inspector of his district, who satisfies himself that the passport is in order, so that he will be able to identify the individual on his return. Later, the passport must be signed by the passport officer at Suez on his outward journey, who again satisfies himself that all is in order before embarkation. On his return journey the passport officer at Tor forwards the document direct to the sanitary inspector of the pilgrim's district. On emerging from Tor the pilgrim is given a voucher which enables him to land at Suez and he is then instructed to proceed direct to his home and present himself daily to the sanitary inspector who at the end of seven days hands back to him his passport duly signed in order that he may be able to withdraw his caution money from the local authority. This system may sound a little complicated but it works extremely well in a country where the people are accustomed from time immemorial to obey the orders of the Government officials. When the passport is obtained the intending pilgrim is able to buy his steamer ticket for the Red Sea voyage at his local post-office. He is helped through all the difficult details by special tourist agents who are not yet under sufficient control. They visit Egypt, Syria, Turkey, and Algeria, and perhaps number about 300. They arrange for the land journey by camel from Jeddah to Mecca, personally conduct their clients to lodgings in the holy city, and are capable of pointing out how the quarantine regulations can be best circumvented on the return journey. For instance, pilgrims may be invited to return by Syria or may be shipped across in dhows to landing places between Suez and Kossair, whence they can reach their homes by camel journey across the desert. Suez for some four months before the great feast is crowded with pilgrims, sometimes as many as 8000 waiting there for steamers. First come the rich Turks and Russians, then the Syrians, and later the Egyptians. Moors dribble in all through the year, regardless of time, for they make the journey on foot, as also do negroes from Bornu and Lake Chad. The returning pilgrims do not stay in Suez unless one of the party is detained in hospital, when his friends insist on remaining until his discharge. Now that disinfection is carried out more rigorously at Tor many Egyptian pilgrims postpone buying presents for their friends until their return to Suez, which occasions some delay. The number of pilgrims detained in the Suez hospital last year was 152, including seven cases of small-pox, three of measles, three of relapsing fever, five of malaria, and one of enteric fever. The bulk of the cases were worn out by fatigue or were suffering from slight ailments aggravated by the voyage and only required rest, but the number of cases of infectious diseases found among the pilgrims is large when it is remembered that they had left Tor only 12 hours before and that they had been ten days under observation there.

Cairo, Feb. 25th.

Obituary.

THOMAS EDMONSTON CHARLES, M.D., LL.D. EDIN.,
F.R.C.P. LOND.,
DEPUTY-SURGEON-GENERAL, I.M.S. (RETIRED); HONORARY PHYSICIAN
TO THE KING.

WE have received from Sir Joseph Fayrer the following sympathetic account of the career of the late Deputy-Surgeon-General Thomas Edmonston Charles:—

"It is with the deepest regret that I record the death of my old and much-loved friend and brother officer, Thomas Edmonston Charles, of the Indian Medical Service, which occurred at Flushing, near Falmouth, on March 2nd, from exhaustion, the result of anæmia and senile changes and consequent deteriorated health. He had resided for the last few years for the sake of his health in the mild climate of Flushing and in some respects had improved, but latterly there had been a sudden deterioration of health, with the fatal termination above recorded.

Thomas Edmonston Charles was born in Calcutta in 1834. His father was an eminent divine of the Scotch Church in Calcutta and was much respected by all classes. Dr. Charles was educated in Edinburgh, where he took the M.D. degree in 1855 and the diploma of L.R.O.S. Edin. in the same year. In 1856 he proceeded to India as a member of the Bengal Medical Service. Soon after arrival he was attached to the 1st Bengal Fusiliers and served with them during the campaign of 1857-58, taking part in the celebrated march from Dughai to Umballa. He was in medical charge of 400 men of that regiment and two squadrons of H.M. 9th Lancers, forming the advanced brigade of the army. He was present with the regiment at the battle of Badlika Sarai on June 8th, 1857, and throughout the entire siege of Delhi till its final capture on Sept. 20th, when he accompanied the column under Brigadier J. G. Gerrard, C.B., into the Rewaree district against the Jeypore and Jodhpore rebels. He also accompanied Sir Thomas Seaton, K.C.B., during his operations in the Doab, was present at the actions of Gungeyree and the battle at Ruttialee and the affair at Mynpoorie. Later he was with the army on its second advance on Lucknow under Lord Clyde, accompanied the storming party of the 1st Bengal Fusiliers, who took the enemy's first position at the Ohnker Kotee and other points in their line of defence, and was present throughout the rest of the siege of Lucknow. Subsequently he was with the column under Sir Hope Grant, K.C.B., in Oude. Dr. Charles was mentioned in the despatch of Major Hume of September, 1859, received the Indian medal and clasps for Delhi and Lucknow, and in 1859 was appointed garrison assistant surgeon at Allahabad.

Soon after this Dr. Charles returned to Calcutta and on the retirement of Professor Wilson of the Medical College of Bengal from the post of professor of midwifery and obstetric physician Dr. Charles was appointed in his place and performed the duties of the chair for many years with great success and with great benefit to the cause of medical education in India. Not only as an obstetric but as a general physician Dr. Charles met with great success and obtained a large practice in the Presidency. But the trying and responsible duties of this work in an Indian climate in time produced their natural results and rendered it necessary for him to resign in 1880 an appointment which had been to him the source of much professional repute and its consequent advantages. While in Calcutta he founded and superintended the construction of the Eden Hospital, a service to which he always reverted with much satisfaction. On returning to Europe Charles did not relinquish the practice of his profession but continued it for some years at Cannes where he became as popular and as highly esteemed as he had been in Calcutta. In 1886 he left Cannes and went to Rome where he also became well known and much esteemed as a physician, while he also made a special study of archaeology and delivered lectures before the British and American Archaeological Society. He remained in Rome until failing health and increasing debility suggested the expediency of trying the influence of the mild climate of West Cornwall and in 1902 he took up his residence in Flushing where he had previously wintered for some years and was to be seen most days sailing in his boat in the harbour. With his usual energy he interested himself in

FOREIGN UNIVERSITY INTELLIGENCE.—*Berne*: Dr. E. Tavel has been appointed Extraordinary Professor of Surgery. Dr. Wilhelm Kolle of Berlin has been appointed Professor of Hygiene and Bacteriology.—*Breslau*: Dr. Hermann Triepel has been appointed First Prosector in the Anatomical Institute with the rank of Honorary Extraordinary Professor.—*Budapest*: Dr. Cornel Preisch has been recognised as *privat-docent* of Children's Diseases.—*Heidelberg*: Dr. Hermann Steudel has been appointed Extraordinary Professor of Physiology.

local matters, political and otherwise, and from his generous and kindly nature soon became very popular among all classes. He was chairman of the Truro division of the British Medical Association for two years and was only prevented by failing health from accepting the office of president-elect of the South-Western branch, which was offered him a few days before his death. He had also just been elected a vice-president of the Falmouth Hospital. In short, he seemed to be so active as to afford ground for hope that his general health might be maintained sufficiently to enable his valuable life to be prolonged for many years, but this was, unhappily, not to be, and he sank on March 2nd, worn out by a life of strenuous and responsible work, much of it in an Indian climate.

Dr. Charles was a many-sided man. In addition to his study of archeology he was much interested in microscopical research and revised the Sydenham Society's translation of Marchiasava's and Bignani's work on malarial fever. He was, as far as his physical energy would permit, an enthusiastic mountaineer, visiting Switzerland regularly for some years, and climbing, among other mountains, the Matterhorn and Mont Blanc. He was also a fisherman in early life and took interest in sport of all kinds, though his pursuits were here limited somewhat by myopia. For many reasons few names will be longer remembered in India than that of Dr. Charles. His great professional ability, the strenuous and energetic manner in which he performed all his duties, his high sense of honour, his amiable character, and his earnest desire to be of use to everyone not only enhanced his value as a public servant but endeared him to all with whom he was associated, and especially to those who, like the present writer, had known him throughout his career and appreciated the sterling qualities of his character."

PROFESSOR MAX NITZE.

OUR Berlin correspondent writes:—Medical science has sustained a severe loss by the sudden death of Professor Max Nitze of Berlin, who died from apoplexy on Feb. 24th. The name of Professor Nitze will be for ever connected with the cystoscope, an instrument of the utmost value in the diagnosis and treatment of diseases of the bladder. He was born in Dresden in 1848 and received his medical education at the universities of Heidelberg, Würzburg, and Leipzig. On becoming qualified in 1874 he received an appointment as assistant medical officer at the municipal hospital in Dresden, where he made the first attempt to examine the interior of the bladder by endoscopy. From Dresden he went to Vienna, where he continued his researches and finally succeeded in constructing the cystoscope which is now in general use. Herr Leiter, the well-known surgical instrument maker in Vienna, carried out Nitze's ideas in a cystoscope which he made and added some technical modifications of his own; the instrument is, therefore, sometimes termed Leiter's cystoscope, though the idea and the plan of construction originated with Nitze. In all the former instruments suggested for the purpose of viewing the interior of the bladder the light was brought from outside, whereas Nitze was the first to introduce a source of light through the urethra into the bladder, so that the whole area of the viscus could be examined. In his first instrument there was a platinum wire which could be heated to incandescence when required and water circulated in it in order to avoid burning the tissues, but in the later patterns the platinum wire was replaced by an Edison lamp. It is well known to medical readers that Nitze's invention was the beginning of a new era in urology, as it enabled a surgeon to make a diagnosis by direct inspection of the bladder and assisted him greatly in deciding what measures were to be taken. Nitze published the results of his researches in his "Handbook of Cystoscopy" and his "Atlas of Cystoscopy," which must be regarded as the standard works in this special branch of surgery. After passing some time in Vienna he settled as a specialist in Berlin, where in 1893 he was recognised *privat-docent* at the University and in 1900 received an appointment as extraordinary professor. The great importance of Nitze's discovery was far from being at once recognised; he never had any official position at a public hospital but was obliged to carry on his researches in his private clinic. He had a very large practice, his patients including members of reigning families and foreigners from

every part of the world. He lived very plainly, having few interests beyond his professional work.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Elfisha H. Gregory, professor of surgery in the Washington University.—Dr. George R. Fowler, professor of surgery in the New York Polyclinic and Hospital.—Dr. John S. Ely, professor of medicine in Yale University.—Dr. Rudolf Schelke, formerly *privat-docent* of ophthalmology in the University of Berlin and director of the eye department of the Hamburg General Hospital, aged 75 years.—Dr. Léon Collin, formerly inspector-general of the medical department of the French army and president of the Academy of Medicine.—Dr. Cuffer, physician to the Necker Hospital, Paris, where he lectured on clinical pathology.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Mr. F. W. Keeble, M.A., Gonville and Caius College, has been approved for the degree of Doctor of Science.—At the Congregation on March 1st the following medical degrees were conferred:—

M.D.—C. F. Hadfield, Trinity.

M.B.—A. D. Brunwin, R. C. Mott, and W. H. Orton, Trinity; and W. H. Threber, Gonville and Caius.

B.C.—W. H. Orton, Trinity; and E. D. Anderson, Pembroke.

—An address of condolence with the Queen on the death of His Majesty King Christian of Denmark has been presented on behalf of the University and has been graciously received by Her Majesty.—The Allen studentship for research in mathematics and natural science has been awarded to P. E. B. Jourdain, B.A., of Trinity College.

LITERARY INTELLIGENCE.—Messrs. Archibald Constable and Co., Limited, have in the press a work entitled "On Leprosy and Fish-Eating" by Mr. Jonathan Hutchinson who has recently made tours in South Africa and India having as their object the examination of the conditions under which leprosy prevails. The history of leprosy, its nature, its prevalence in different countries, and the conditions under which it has disappeared from many countries are all fully discussed and facts are brought forward in support of the theory that it is not ordinarily contagious and that its real cause is the use as food of badly cured fish. There are chapters on the influence of sex, of religious creed, and of poverty in relation to leprosy, and the measures for suppression are fully discussed. The volume contains maps and illustrations.—"The Anæsthetic Technique for Operations on the Nose and Throat," by Mr. A. de Prenderville, will be published in a few days by Mr. Henry J. Glaisner of Wigmore-street.

VOICE DESTRUCTION.—At Christ Church, Oxford, on March 2nd a lecture was delivered by Miss C. D'Orsey in connexion with the University branch of the Voice Training Society. Dr. William Osler, the Regius professor of medicine, was in the chair, and Canon Ince, the Regius professor of divinity, was also present. Miss D'Orsey, who took "voice destruction" as her subject, said that the voice was, or should be, a musical instrument. The two main causes of voice destruction were (1) want of voice training and (2) wrong methods of vocal training. The absence of voice training caused a very large amount of the voice destruction which was daily going on. Inability to control the motor power of the breath, especially in expiration, was fatal to the proper action of the vocal cords. The speech of most persons suffered from want of resonance and from monotony or the absence of modulation. Canon Ince said that what was wanted was to bring the matter distinctly before the men resident at the University, whether they were going to be clergymen or public speakers, so that they might avail themselves of the opportunities of instruction which were provided. Professor Osler said that the subject was one in which he had been interested for some years and it was unquestionably of practical importance to young men. Speaking generally, there was no country where the voice was better than in England. An Englishman, however, on going abroad, especially to America, acquired the voice of the natives in a few years, whereas an Irishman could be

recognised anywhere and a Scotchman's voice remained unaltered as long as he lived. It was to be wished that every undergraduate in Oxford should have his voice trained systematically so that he could stand, think, and talk at the same time. This, however, was a difficult accomplishment which required a good deal of training. All who were interested in education ought to encourage the movement, and the Education Department in this country might learn something from the example of France.

Mr. T. D. Smith, who died on March 3rd, at the Royal Naval College, Osborne, was a son of Mr. Thomas Davidson Smith, a medical man of Moor Platt, near Lancaster. Born in 1875, he was educated at Lancaster Royal Grammar School and later at Jesus College, Cambridge, where he obtained first-class honours in the Natural Science Tripos of 1897. After two years as science master at Eastbourne College he entered with a scholarship at the London Hospital where he obtained many distinctions. He won the gold medal for physiology in the London M.B. in 1901 and for two years he was the editor of the *London Hospital Gazette*. Rather less than a year ago he was appointed assistant master at the Royal Naval College, Osborne, where he died after a few days' illness.

PRUDENTIAL ASSURANCE COMPANY, LIMITED.—The fifty-seventh annual report of this company, dealing with the year ending Dec. 31st, 1905, shows that the number of policies issued during the year in the ordinary branch was 75,293, assuring the sum of £7,211,427 and producing a new annual premium income of £395,029. The premiums received during the year were £4,123,318, being an increase of £154,302 over the year 1904. The claims of the year amounted to £1,812,618. The number of deaths was 7437 and 7775 endowment assurances matured. The number of policies in force at the end of the year was 773,051. In the industrial branch the premiums received during the year were £6,139,050, being an increase of £159,715. The claims of the year amounted to £2,261,748. The number of deaths was 238,220, and 3344 endowment assurances matured. The total number of policies in force at the end of the year was 16,065,268: their average duration is 11 years. The assets of the company in both branches, as shown in the balance-sheet, are £59,484,376, being an increase of £4,104,871 over those of 1904.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Pharmacy Bill.

THE Pharmacy Bill, which has been introduced "to provide for the further regulation of the sale of poisons and the compounding of medical prescriptions and to amend the Pharmacy Acts, 1852 and 1868," has the formal support of Mr. IDRIE, Mr. HENRY KIMBER, Mr. HENRY HEATON, Mr. JAMES GIBB, Mr. REMKANT, Mr. ELLIS GRIFFITH, Mr. CROOKS, Mr. OOWAN, Mr. GULLAND, and Mr. O'MALLEY. It was brought in by Mr. WINKFRET.

Sale of Whisky Bill.

This Bill has been put down for second reading on Wednesday, March 21st. It is officially described as a measure to amend the law relating to the sale of whisky and to provide for the marking of casks and other vessels containing whisky. Mr. ARCHIBALD WILLIAMSON has taken charge of it and he is supported by Mr. SUTHERLAND, Mr. CATHCART WASON, Mr. BULLSON, and Mr. HARMOOD-BANNER.

Importation of Wines.

A useful return, in view of current controversies and the recent article on Claret in THE LANCET, has been ordered at the instance of Sir EDWARD CLARKE. It will show the quantity of wines at the various degrees of strength which were imported into the United Kingdom in 1905 from Spain, Portugal, Madeira, France, Germany, Holland, Italy, and other countries. Last year a similar return was prepared.

The Government and the Cruelty to Animals Act.

As a result of representations made by Colonel Lockwood and others the Home Secretary has promised to look into the administration of the Cruelty to Animals Act and see if it might not be well to have a full inquiry into the whole matter. Colonel Lockwood had suggested that dogs should be excluded from the operating table. It was pointed out by Sir JOHN BATTY TUKE that Parliament and the public have been largely responsible for the increase in the number of experiments. Almost every municipal authority has its laboratory in which experiments are carried out for the purpose of obtaining knowledge that will be used in the alleviation of human suffering, and he

further showed that thousands of the experiments are undertaken for the identification of such diseases as diphtheria and for the production of antidotes for tetanus and hydrophobia. But while he is quite satisfied himself that the way in which the Act is carried out is most thorough and complete, he admits that a misapprehension exists in the public mind, and on that account he is at one with the Home Secretary in thinking that a full investigation might be desirable.

Certifying Surgeons.

The proposal concerning certifying surgeons which was embodied in the Accidents Bill of last session, and which caused considerable apprehension, has been omitted from the Bill introduced by the Government this week. It was explained on Tuesday by Mr. COCHRANE, the ex-Under-Secretary for the Home Office, that the late Government had had no desire to interfere with the duties and emoluments of these officers "who seem to have thought," to quote Mr. COCHRANE's words "that their sphere of influence and usefulness was to be curtailed." According to Mr. SAMUEL, the new Under-Secretary, "the matter was really one of form," but in order to allay any alarm the proposal, such as it was, has now been struck out.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 22ND.

Amendment of the Medical and Dental Acts.

LORD ROBERT CECIL asked the First Lord of the Treasury whether the Government intended to introduce any Bill to amend the Medical and Dental Acts in accordance with the proposals of the British Medical and Dental Associations.—Mr. ASQUITH, who answered, said: I fear that I cannot make any statement as to legislation by the Government on this subject. I understand that the British Medical Association has a Bill in draft and it will perhaps intrust it to a private Member.

A Morgue for Rathmines.

MR. OLANCY asked the Chief Secretary for Ireland whether his attention had been drawn to the fact that no morgue had been provided for the urban district of Rathmines and Rathgar, with the result that inquests in that district must frequently be held in public-houses, while the dead bodies were kept in stables and outhouses; and whether he would, through the Local Government Board, urge on the council of Rathmines to provide such necessities as a morgue before proceeding with any further schemes for extending the boundaries of its district.—Mr. BAYCE replied: The circumstances mentioned do not appear to have been brought to the notice of the Local Government Board; but the Board has ascertained that the Rathmines urban district council has decided to include in next year's estimate the necessary provision for the erection of a morgue.

THURSDAY, MARCH 1ST.

The Russian Duty on Medicine.

SIR HOWARD VINCENT asked the President of the Board of Trade whether the new tariff coming into force in All the Russias against British goods increased the duties on the same scale as applied to medicines—namely, from 24 to 40 roubles per pound, the bottles, tins, and paper in which the medicines were packed being included in the weight for duty; and, having regard to the effect such increased duties would have upon British trade with Russia, what representations had been made to St. Petersburg on the subject and with what result.—Mr. LLOYD GEORGE answered: The increase in the Russian duty on medicines from 24 to 40 roubles, referred to in the question, will not be applied to British goods, since the existing rate of 24 roubles has been conceded to France under the new Russo-French Commercial Treaty and can consequently be claimed by British exporters in virtue of the most-favoured-nation provision of the Anglo-Russian Treaty.

FRIDAY, MARCH 2ND.

Poor-law Medical Officers' Salaries.

DR. G. H. POLLARD asked the President of the Local Government Board whether he would grant a return showing for each Poor-law union the number of medical officers and the number of medical officers with their areas and the population and the number of medical officers with their areas and the population and whether extra fees were paid as required by the Poor-law orders and the annual amount of such extra fees.—Mr. JOHN BURNS answered: I understand that the Poor-law Commission is considering what statistics it will find it necessary to obtain for the purposes of its inquiry. I will communicate with it with a view of ascertaining its inquiry. I will communicate with it with a view of ascertaining its inquiry. I will communicate with it with a view of ascertaining its inquiry.

Commission on Irish Poor-laws.

MR. HUGH BARRIE asked the Chief Secretary for Ireland when it was expected that the report of the Viceregal Commission appointed by the late Government with reference to the Irish Poor-laws would be issued.—Mr. BAYCE replied: I am informed by the Commissioners that they hope to present their report about the end of next month.

Lunacy in Ireland.

MR. J. P. FARRELL asked the Chief Secretary for Ireland whether he was aware that whilst the capitation grant of 4s. remained the same up to 11s. per head the Government grant of 4s. remained the same; and whether, having regard to the increase of lunacy in Ireland and the decrease of population, coupled with an increase of taxation, the Government would consider the advisability of increasing the capitation grant per head for asylum patients from 4s. to 11s. 6d. per week.—Mr. BAYCE answered: The net capitation cost in respect of lunacy in Mullingar Asylum amounts to 9s. 9d. per week; but, inclusive of repayments for loans in respect of building, it is 12s. 8d. per week. The Government grant of 4s. per week is fixed by statute and I am unable to hold out any hope of legislation to increase the amount. I am informed that the capitation cost in this asylum has not recently increased as implied in the question but is now considerably less than it was a few years ago.

MONDAY, MARCH 5TH.

Medical Examination of Volunteers.

Mr. M'CRAE asked the Secretary of State for War whether the order or regulation in the War Office circular of July 11th, 1905, requesting general officers commanding to report results of a medical examination of volunteers under their command as to fitness for active service abroad was still in force; if so, whether it was proposed to countermand the same; and further, if he could say whether any volunteers were punished for non-compliance with the order and what steps would be taken to deal with any such cases.—Mr. HALDANE replied: The circular referred to is not now in force. There were a few cases in which volunteers were punished in connection with this circular. Some of these cases are now receiving the consideration of the Army Council.

TUESDAY, MARCH 6TH.

Standard of Meat Condensation.

Mr. MOWER asked the President of the Local Government Board whether his attention had been directed to the fact that the standard of meat condensation, strongly urged by the Local Government Board upon local authorities in 1905, was not infrequently ignored in whole or part by sanitary authorities; and whether he would, in the interest of the public health, take steps to make the standard referred to absolutely compulsory.—Mr. BURNES answered: According to the latest information I have received there seems no reason to doubt that as regards the carcasses of cattle the standard referred to is commonly acted upon by the officers of local authorities. I understand, however, that this is not the case to anything like the same extent as regards the carcasses of pigs. The Local Government Board has on several occasions impressed upon local authorities the importance of uniformity of action in dealing with tuberculous meat but legislation would be necessary to make the standard compulsory. I could not promise to propose legislation on the subject pending the report of the Royal Commission on Tuberculosis.

BOOKS, ETC., RECEIVED.

ASSOCIATION OF AMERICAN PHYSICIANS (Recorder of the Association. Dr. Solomon Solis Cohen, 1535, Walnut-street, Philadelphia, U.S.A.) Transactions of the Association of American Physicians. Twentieth Session, held at Washington, D.C., May 16th and 17th, 1905. Vol. XX. Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

The Treatment of Gonorrhoea in the Male. By Charles Leadham-Green, M.B., F.R.C.S., Senior Surgeon to Out-patients, Queen's Hospital, Birmingham. Price 5s.

Maladies Caused by the Air we Breathe Inside and Outside the Home. By Thomas Oliver, M.A., M.D., LL.D., F.R.C.P., Professor of Physiology in the University of Durham; Physician to the Royal Infirmary, Newcastle-on-Tyne. Being the Harben Lectures for 1905. Delivered in the Lecture Theatre of the Royal Institute of Public Health. Price 3s. 6d. net.

Examination Questions for the Diploma of Public Health. By Hugh B. Jones, M.A., M.D., D.P.H. Price 2s. 6d. net.

BAILLIÈRE, J. B., ET FILS, 19, Rue Haute-fenille, Paris.

Les Accidents du Travail. Etude Clinique et Médico-Légale des Affections Internes Produites par les Accidents. Par le Dr. Ch. Nibert, Expert près le Tribunal de la Seine. Chef des Travaux d'Anatomie Pathologique au Laboratoire de Médecine Légale de la Faculté de Médecine. Price Fr. 10.

Nouveau Traité de Médecine et de Thérapeutique. Publié en fascicules sous la Direction de M.L.P. Brouardel et A. Gilbert. VII. Maladies Vénériennes. Par P. Balzer, Médecin de l'Hôpital Saint-Louis. Price F. 6.

BLACK, ADAM AND CHARLES, Soho-square, W.

Rome. A Practical Guide to Rome and its Environs. By Eustace Reynolds-Ball, B.A., F.R.G.S., Author of "Cairo of To-Day," "Jerusalem," "Mediterranean Winter Resorts," "Paris in its Splendour," &c. With eight illustrations in colour by Alberto Pisa and three plans. Price 2s. 6d.

BRYMPT, JONES AND EDWARD, 350, Oxford-street, W.

A Piece of Delf and Other Fragments. Price not stated.

CHARLIS AND HALL, LIMITED, London.

The Origin of Life: Its Physical Basis and Definition. By John Butler Burke. Price 16s. net.

Reference Handbook of the Diseases of Children. For Students and Physicians. By Prof. Dr. Ferdinand Fribwald, Chief of Clinic in the Vienna Polytechnic. Edited, with additions, by Thompson S. Westcott, M.D., Associate in Diseases of Children in the University of Pennsylvania. Price 18s. net.

CRITCHFIELD, J. AND A., 7, Great Marlborough-street, W.

Clinical Applied Anatomy or the Anatomy of Medicine and Surgery. By Charles R. Box, M.D., B.S., B.Sc. Lond., M.R.C.P. Lond., F.R.C.S. Eng., Physician to Out-patients, St. Thomas's Hospital, and Assistant Physician to the London Fever Hospital. Lecturer on Applied Anatomy and Demonstrator of Morbid Anatomy, St. Thomas's Hospital, and W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon, Joint Lecturer on Bertholomew's Hospital, Examiner in Anatomy for the Fellowship of the Royal College of Surgeons, England, and Examiner in Surgery for the Society of Apothecaries. Price 12s. 6d. net.

COBLETZ, OSCAR, Maassenstrasse, 13, Berlin, W.

Die Behandlung der Krankheiten der Nase und des Nasenrachens. Von Prof. Dr. A. Onodi, Budapest, und Prof. Dr. A. Rosenbergs, Berlin. Price, paper, M. 2.50; bound, M. 10.

CORNISH BROTHERS, LIMITED, 37, New-street, Birmingham.

Diseases of the Rectum. Being a Short Account of the Symptoms, Diagnosis, and Treatment of some Diseases affecting the Ano-Rectal Region. By F. Victor Milward, M.B., B.C. Cantab., F.R.C.S. Eng., Surgical Casualty Officer, General Hospital, Birmingham; Surgeon to Out-patients, Children's Hospital, Birmingham. Price 5s. net.

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In Guérison? Par le Professeur Alfred Fournier, de l'Académie de Médecine. Price Fr. 1.

DUCKWORTH AND CO., 3, Henrietta-street, Covent-garden, W.C.

The British Woodlice, being a Monograph of the Terrestrial Isopod Crustacea occurring in the British Islands. By Willford Mark Webb, F.L.S., Lecturer on Biology and Nature Study to the Surrey County Council, Honorary Secretary of the Selborne Society, and Charles Sillem. Price 6s. net.

F. A. DAVIS COMPANY, 1914-15, Cherry street, Philadelphia, Pa., U.S.A.

Nasal Sinus Surgery with Operations on Nose and Throat. By Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. Price \$2.50 net.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology and Head of the Department of Chemistry in the University of Iowa. Second edition, revised and enlarged. Price \$1.00 net.

The Physical Examination of Infants and Young Children. By Theron Wendell Kilmer, M.D., Adjunct Attending Pediatricist to the Sydenham Hospital, Instructor in Pediatrics in the New York Polytechnic Medical School and Hospital, New York. Price 75 cents net.

Christianity and Sex Problems. By Hugh Northcote, M.A. Price £2.00 net.

FITFIELD, ARTHUR C., The Simple Life Press, 43, Fleet-street, E.C.

Curdled Milk, a Natural Key to Health and Long Life. By Dr. A. M. Montenuis (of the Sanatorium of Sylville, Var, France). Authorized translation by Fred. Rothwell, B.A. Price 6d. net.

FISCHER, GUSTAV, Jena.

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FROWDE, HENRY, Oxford University Press Warehouse, Amen-corner, E.C.

Small pox, its Dissemination and Prevention. Thesis for Degree of Doctor of Medicine. By Francis Joseph Stevens, M.A., M.D. Oxon., M.R.C.S., D.P.H., Sometime Exhibitor of Exeter College, Oxford, Medical Officer of Health to the Metropolitan Borough of Camberwell. Price 2s. 6d. net.

G. P. PUTNAM'S SONS, London and New York.

Physical Efficiency. A Review of the Deleterious Effects of Town Life upon the Population of Britain, with Suggestions for their Arrest. By James Cantlie, M.A., M.B., D.P.H., with Preface by Sir Lauder Brunton, M.D., D.Sc., LL.D., F.R.S., and a Foreword by Sir James Crichton-Browne, M.D., LL.D., F.R.S. Price 3s. 6d.

GREENING AND CO., LIMITED, London.

A Time of Terror. The Story of a Great Revenge (A.D., 1910) Price 6s.

HIRSCHWALD, AUGUST, Unter den Linden, 63, Berlin, N.W.

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Die Topographie des Lymphgefäßapparates des Kopfes und des Halses in ihrer Bedeutung für die Chirurgie. Von Dr. August Most, dirigierendem Arzte der chirurgischen Abteilung des St. Georg-Krankenhaus in Breslau. Price M. 9.

HODDER AND STOUT, 27, Paternoster-row, E.C.

The Medical Epitome Series. Edited by Victor Cox Pedersen A.M., M.D., New York. Practice of Medicine. A Manual for Students and Practitioners. By Hughes Dayton, M.D., Principal to the Class in Medicine, New York Hospital, Out-patient Department. Price 4s. net.

JACK, T. C. AND E. C., 34, Henrietta-street, W.C., and Edinburgh.

Ethics. By C. W. Saleeby, M.D., Author of "The Cycle of Life," "Evolution of the Master Key," &c. Price 1s.

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J. B. LIPPINCOTT COMPANY, Philadelphia and London.

Photographic Atlas of the Diseases of the Skin. In four volumes. Vol. IV. By George Henry Fox, A.M., M.D., Professor of Dermatology, College of Physicians and Surgeons, N.Y. Price 25s. net, each volume.

JOHN DALE, SON, AND DANIELSSON, LIMITED, 83-91, Great Titchfield-street, Oxford-street, W.

The Transactions of the Society of Anaesthetists. Vol. VII. 1903-04 and 1904-05. Price not stated.

LANGE, JOHN, The Bodley Head, London and New York.

The Rheumatic Diseases. By J. Odery Symes, M.D. Lond., D.P.H., M.R.C.S., L.R.C.P., Assistant Physician and Bacteriologist, Bristol General Hospital. Price 5s. net.

LEHMANN, J. F., Heustrasse, 20, München.

Das Schielen, Ursachen, Folgen, Behandlung. Von Professor Dr. Wilhelm Schoen, in Leipzig. Price M. 6.

Die Orthographie. Ein Lehrbuch für Aerzte. Von Dr. Karl Franke, Spezialarzt für innere Leiden in München. Price M. 4.

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Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 21. On the Standardisation of Anti-Typhoid Vaccine. By Captain George Lamb, M.D., I.M.S., Director, Pasteur Institute of India, and Captain W. D. C. Forster, M.B., D.P.H., I.M.S. Price 6 annas, or 7d.

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OLIVER AND BOYD, Tweeddale-court, Edinburgh (SIMPSON, MARSHALL, AND CO., LIMITED, London).

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SAUNDERS, W. B., AND COMPANY, Philadelphia and London.

The Operating Room and the Patient. By Russell S. Fowler, M.D., Surgeon to the German Hospital, Brooklyn, New York. Price 10s. net.

SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE, Northumberland-avenue, W.C.

The Sacred Tenth, or Studies in Tithing, Ancient and Modern. By Henry Lunsell, D.D., F.R.G.S., M.R.A.S., Chaplin of Morden College, Blackheath, Author of "Through Siberia," "Russian Central Asia," "Chinese Central Asia," &c. In two volumes. Price not stated.

SWAN SONNENSCHNIG AND CO., LIMITED, 25, High-street, Bloomsbury, W.C.

The Public Schools Year-Book. With a General List of Preparatory Schools. Seventeenth Year of Publication. 1906. Founded by three Public School Men, Eton, Harrow, Winchester. Price 2s. 6d. net.

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Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BULLEY, F. M., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

CASSIDY, M. A., M.B., B.C. Cantab., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

COLES, C. ST. A., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

COX, R. J. H., M.R.C.S., L.R.O.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

CROOKS, JAMES, M.D., C.M. Toronto, L.R.C.S. Edin., L.S.A., has been re-appointed Medical Officer of Health of Chard (Somerset).

CUNNINGHAM, N. R., M.R.C.S., L.R.O.P. Lond., has been appointed to the Ear Department and to the Electrical and X Ray Department at St. Thomas's Hospital.

DICKSON, A. N., M.R.C.S., L.R.C.P. Lond., has been appointed to the Skin Department at St. Thomas's Hospital.

DREW, J. H., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

EYRE, O. R. B., M.R.C.S., L.R.O.P. Lond., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

FALK, H., M.B., B.C. Cantab., has been appointed Resident House Surgeon at St. Thomas's Hospital.

FOOTNER, G. R., M.B., B.C. Cantab., has been appointed Senior Casualty Officer to St. Thomas's Hospital.

GIBBS, S. R., M.R.C.S., L.R.O.P. Lond., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

GOTTLIEB, H. B., M.R.O.S., L.R.O.P., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital.

GRAY, H. T., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

HALL, I. WALKER, M.D. Vict., has been appointed Professor of Pathology at the University College, Bristol.

HEGGS, T. BARRETT, M.D., Ch.B. Aberd., D.P.H. Camb., has been appointed Medical Officer of Health to the combined Districts of Sittingbourne and Milton, and Medical Superintendent of their Isolation Hospitals.

HEWITT, F. S., M.R.C.S., L.R.O.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

HITCHINS, CHARLES VERNON, M.R.C.S., L.S.A., has been appointed Honorary Consulting Surgeon to the Weston-super-Mare Hospital.

HOOKER, A. W., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

HOWARTH, W. G., M.B., B.C. Cantab., M.R.C.S., L.R.O.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

HOWITT, A. B., M.R.C.S., L.R.O.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

JEVENS, R. O., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

LOUGHBOROUGH, A. L., M.R.C.S., L.R.O.P. Lond., has been appointed to the Ear Department at St. Thomas's Hospital.

MACDONALD, S. G., M.R.C.S., L.R.O.P. Lond., has been appointed to the Throat Department and to the Children's Surgical Department at St. Thomas's Hospital.

MAITLAND, LYTTON, M.B., B.S. Lond., has been appointed House Surgeon at the Great Yarmouth General Hospital.

MASKELL, JOHN WILLIAM, M.R.O.S., L.R.O.P. Lond., has been appointed an Honorary Medical Officer to the Chorley Dispensary and Rawcliffe Hospital.

MEER, W. O., M.B., B.S. Lond., M.R.C.S., L.R.O.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

PAGE, C. M., M.R.C.S., L.R.O.P. Lond., has been appointed to the Children's Surgical Department at St. Thomas's Hospital.

SANKEY, W. O., M.R.C.S., L.R.O.P. Lond., has been appointed to the Skin Department at St. Thomas's Hospital.

SINGROX, H. S., M.R.C.S., L.R.O.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

THOMPSON, WILBERFORCE, L.R.O.P. Lond., M.R.O.S., L.S.A., D.P.H. Lond., has been appointed Medical Officer of Health for the Bridgwater (Somerset) Rural District.

TOSWILL, LEONARD ROBERT, M.R.C.S., L.R.O.P. Lond., has been appointed Honorary Surgeon to the Exeter Dispensary.

TRESDRER, WILLIAM ELLIOT, M.B., B.S. Lond., has been appointed Medical Officer for the Chudleigh District by the Newton Abbot (Devon) Board of Guardians.

WHITEHOUSE, H. B., M.R.O.S., L.R.O.P. Lond., has been appointed to the Throat Department at St. Thomas's Hospital.

WHITTING, R. E., M.B., B.C. Cantab., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

WOODHOUSE, CECIL, M.D., B.C. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WRIGHT, F. R. E., M.B. Lond., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Junior Casualty Officer to St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch road, Birkenhead.—House Surgeon. Honorarium £100, with board, residence, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £50 and fees.

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LONDON HOSPITAL PATHOLOGICAL INSTITUTE.—Director. Salary £500.

LONDON TREAT HOSPITAL, 24, Great Portland-street, W.—House Surgeon (non-resident). Honorarium at rate of £50 per annum.

MANCHESTER, WEST KENT GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board and residence.

MARLBOROUGH VICTORIA MEMORIAL JEWISH HOSPITAL.—Resident Medical Officer. Salary £20 per annum, with board and apartments.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant; House Physician, and Assistant House Surgeon, all for six months. Also Casualty Officer.

MIDDLEBROUGH, NORTH OXFORD HOSPITAL.—House Surgeon. Salary £120, with apartments and board.

MIDWINTER, KING EDWARD VII. SANATORIUM.—Assistant Medical Officer. Salary £150 per annum, with board and residence.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £20 per annum, with board, lodging, and washing.

QUEEN ANNE'S DISPENSARY, Pollard-row, Bedford Green, E.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, coal, gas, and attendance.

ROTHSCHILD HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary at rate of £50 per annum, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALFORD INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SHEFFIELD FIVE HOSPITALS.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

SHEFFIELD, SALOP INFIRMARY.—House Physician, unmarried. Salary at rate of £50 per annum, with board and apartments.

TATTON INFIRMARY HOSPITAL.—Medical Attendant. Salary £120 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Dis-street, Chelsea, S.W.—House Physician for six months. Honorarium of £20, with board and lodging.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Casualty Medical Officer. Honorarium £50 per annum.

WIMBORNE, WIMBORNE, LANCASHIRE CORRY ASPHYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

NOTICE is given of a vacancy for an additional Dental Surgeon for one year's service in the Army at a salary of £355 per annum and travelling expenses, vide p. 705.

Births, Marriages, and Deaths.

BIRTHS.

CARLTON.—On March 1st, at Sutton, Surrey, the wife of Grenville W. Carlton, L.R.C.P. Lond., M.R.C.S. Eng., of a son.

GARY.—On March 2nd, at the Medical Mission House, Anand, India, the wife of Nell M. Gary, F.R.C.S. Edin., of a daughter.

KENT COOKE.—On Feb. 28th, at Jhansi, C.P. India, the wife of E. Hunt Cooke, M.A., M.B. B.C. of a son.

MARSH.—On March 2nd, at Queen-street, Scarborough, the wife of B. B. Marley, F.R.C.S., of a son.

SCARLETT.—On March 4th, at 11 Charlotte-street, Brighton, the wife (née Colley) of Harold H. E. Scarlett, M.A., M.B. C.S., of a son.

TIPPING.—On March 5th, at Tisbury, Palmer's Green, N., the wife of Harold Tipping, M.D. Lond., M.R.C.S., L.R.C.P., of a son.

DEATHS.

CHARLES.—On March 2nd, at Rushing, Cornwall, Deputy Surgeon-General Thomas Edmondson Charles, late of the L.M.S., M.D., LL.D. Edin., F.R.C.P. Lond., R.M.P., aged 71 years.

DARVESS GARR.—On March 3rd, at East Cowes, Thomas Davidson Smith, M.A., M.R.C.S., L.R.C.P., Assistant Master, Royal Naval College, Osborne.

TREKOW.—On March 2nd, at his residence, 64, High-street, Oxford, Henry Matthews Trekow, M.D., F.R.C.P., in his 72nd year.

N.B.—A fee of 4s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PRESCRIBING BY UNQUALIFIED PERSONS.

ON Tuesday, March 6th, Dr. H. R. Oswald held an inquest at Deptford upon the body of a woman named Frost, the wife of an Inspector on the S.E. and C. Railway. It was stated that she had died while a student of the Westminster Hospital, named Foster, was attending her. The evidence showed that Mrs. Frost had been in ill health for some little time. She had an aversion to "doctors" but appeared to have taken some interest in Mr. Foster, who is 23 years of age and who had lodged for a considerable period at No. 24 in the same road, and whom she had known as a connexion of Dr. Foster who practised in Lewisham. The deceased had referred to Mr. Foster as "the young doctor" and her husband, thinking he was qualified, asked his daughter to tell Mrs. Merritt, a woman who was assisting in the house, to call in Mr. Foster. This was on Feb. 23th and on March 1st Mr. Foster saw Mrs. Frost who experienced considerable difficulty in breathing. He sent her a bottle of medicine and later in the day called again. After taking a second bottle of medicine Mrs. Frost improved so much that she was able on March 2nd to sit up for a time, but about 2.50 p.m., after partaking of an egg with warm milk she suddenly expired. Mrs. Merritt and Mrs. Allen, with whom Mr. Foster lodged, both said he did not hold himself out in any way as a medical man, and Mr. Foster said he simply attended Mrs. Frost as a friend and after telling her that he was not qualified but wished he was he made up a bottle of medicine at her request which was designed to relieve the difficulty in breathing which she experienced and also to act as a tonic. He told her also that she must keep her bed. He had no intention of making any charge. A niece of the deceased, who followed Mr. Foster to the sick room within a minute or so of his arrival and who remained there during the whole of the time, said nothing was said in her hearing as to Mr. Foster not being qualified and she did not think anything of the sort could have been said. Dr. H. Bowen Williams, Lewisham High-road, for whom Mr. Foster acts as dispenser from 5 p.m. to 9 p.m. daily, and Mr. E. P. Daniell, New Cross road, both stated that the prescription from which Mr. Foster had made up the medicine was one generally used in cases of weak heart, accompanied by coughing, and Mr. Daniell said he would probably have given the same medicine but stronger. The latter gentleman, who had conducted a necropsy, found degeneration of the myocardium, which would cause death by syncope. The coroner is reported to have said that Mr. Foster seemed, so far as this patient was concerned, to have had a competent knowledge of the case and did not seem to have been guilty of gross ignorance, inattention, or negligence. It might be that he had been indiscreet but in doing what he did he was only following the custom which prevailed in many hospitals. As a student he was a man who had had considerable experience—six years. In returning a verdict of "Death from natural causes" the jury expressed the opinion that no blame attached to Mr. Foster. We do not quite understand the remark of the coroner as to "the custom which prevailed in many hospitals." No hospital, so far as we know, allows its students to prescribe for patients except under the supervision of a qualified man, such as a house surgeon or house physician or a resident midwifery assistant. We agree, however, in the opinion of the jury that Mr. Foster neither meant nor did any harm, but our advice to him is to get qualified as soon as may be.

A NEW PATHOLOGY OF WARTS.

A NON-MEDICAL correspondent has written to us claiming to have discovered that "the common warts usually found on the face and hands" are caused by the action of water. The principal part of his letter is as follows:—"After washing when drying oneself with a towel the same motions are generally made after each evolution, incidentally leaving the same portions of the skin still moist; this moisture being absorbed by the skin produces the wart. If every part of the skin was rubbed dry after washing no warts would form." We are willing to publish the substance of our correspondent's letter, though we are not in full agreement with his views. It may be remarked that there are several occupations followed by both males and females in which the hands undergo prolonged wetting without any subsequent exceptional tendency to warts.

APPENDICITIS AND ENAMELLED FOOD UTENSILS.

FOR some time past medical men have speculated on the causes of appendicitis and not a few have favoured the mechanical theory, that is, the introduction into the appendix through the food of some sharp irritating substance, such as pipe, tooth-brush bristles, grit in flour, particles of antimonic rubber stoppers, and so forth. A lay correspondent makes yet another suggestion, and so forth. He writes, "uses increasingly enamel ware which splinters on the least provocation. I find that not only a food such as porridge will carry the needle-like splinters to the body but that a soap and even tea may very well contain sharply splintered particles of this most dangerous glass." He concludes that the use of enamelled ware

in food utensils should be forbidden and that we ought to return to the former plain iron and copper-ware utensils. There can be no question that the swallowing of spicules of enamel would involve some risk to health but we are not aware that any cases of appendicitis have been conclusively traced to the presence of such in the appendix.

ADULTERATED DRESS FABRICS.

To the Editors of THE LANCET.

SIRS,—Our letter to the *Drapers' Record* under the heading "THE LANCET'S Retort" was in no way intended as antagonistic to your efforts to suppress the misrepresentation of textile goods. Unfortunately we had not seen your article on this subject from which the *Drapers' Record* quoted, but your question, "Why is spun silk, which may contain 50 per cent. of cotton, not called spun cotton?" conveyed to the reader the impression that spun silk is a mixture of silk and cotton and the object of our letter was, as silk manufacturers, to point out that "spun" in connexion with "silk" was a term used in the trade to distinguish a particular class of silk from those of a superior quality.

We are in entire sympathy with your views on this question and should hail with satisfaction any measure that went in the direction of making false representation of goods an offence against the law.

We are, Sirs, yours faithfully,

Leek, Staffordshire, March 6th, 1906.

WM. MILNER AND SONS.

** We are much obliged to Messrs. Milner and Sons for their letter.—Ed. L.

THE GEORGE BROWN TESTIMONIAL FUND.

THE following is the second list of subscriptions to the "George Brown Testimonial Fund"—

	£ s. d.		£ s. d.
Previously acknowledged...	22 11 6	Mr. J. Breward Neal	0 10 6
Professor H. Corby	1 0 0	Mr. Joseph Smith, J.P.	1 1 0
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Dr. J. D. Rawlings	0 10 6	Mr. M. S. Wilson	1 1 0
		Dr. H. W. Williams	0 10 6

The treasurer hopes that those who intend to subscribe will send in their subscriptions without delay to Dr. J. Pollock Simpson, 8, Upper Montagu-street, London, W., as it is intended to close the fund at an early date.

Scirrhus.—We have no information whatever concerning the unregistered practitioner. The patient should not undergo any such treatment without consulting a medical man, to do so means the incurring of considerable risk and probably the wasting of much money.

F.R.C.S.—We do not think that the suggested course would be advisable, or quite fair to the medical man residing in the village.

L.E.C.P. & S.E. will find all the information that he requires in "First Aid to the Injured," by Samuel Osborn, F.R.C.S.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan

(9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (3.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (15th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. H. A. Caley: Some Clinical Features of the Several Types of Colitis.—Dr. J. J. Perkins: Syphilis in Medical Practice.

TUESDAY (15th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (21, Hanover-square, W.).—8.30 P.M. Papers:—Mr. A. W. Ormond: Notes on 100 Cases of Intracranial Tumour, with Special Reference to the Ocular Symptoms.—Dr. P. J. Cammidge: An Improved Method of Performing the "Pancreatic" Reaction in the Urine.

CHELSEA CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, King's-road, S.W.).—8.30 P.M. Annual Clinical Debate: Serum Therapy. Prof. R. T. Hewlett, Dr. A. B. Wright, and Prof. G. S. Woodhead will take part in the discussion.

WEDNESDAY (15th).—HUNTERIAN SOCIETY (Court Room, Guy's Hospital).—8.30 P.M. Cases can be examined. 4 P.M. Clinical Afternoon Meeting.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Meeting.

THURSDAY (15th).—CHILDHOOD SOCIETY AND THE BRITISH CHILD STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Lecture:—Dr. J. W. Slaughter: Imagination in Childhood. (Arranged by the Childhood Society.)

FRIDAY (16th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Cases and Specimens will be shown by Dr. W. Kwart, Dr. C. O. Hawthorne, Dr. E. Pritchard, Dr. F. J. Poynton, Dr. E. Cautley, Dr. E. K. Hay, Mr. D. Drew, Mr. H. Lett, and others.

EPIDEMIOLOGICAL SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. J. T. O. Nash: Evolution in Relation to Disease.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (15th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Erasmus Wilson Lecture:—Mr. J. Sherren: The Distribution and Recovery of Peripheral Nerves studied from Instances of Division in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. H. G. Adamson: Clinique. (Skin.) 5.15 P.M. Lecture:—Mr. B. Clarke: Errors of Refraction, their Diagnosis and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—12 noon. Dr. H. Wright: Pathological Demonstration. 2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. T. M. Legge: The Medical Profession in Relation to Industrial Disease and the Factory Act.

TUESDAY (15th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Hall, Pall Mall East).—5 P.M. Goulstonian Lecture:—Dr. H. B. Shaw: Auto-intoxication.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Dr. C. O. Hawthorne: Clinique. (Medical.) 5.15 P.M. Lecture:—Dr. D. Sommerville: Errors of Digestion in Relation to Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. S. Taylor: Demonstration in Medical Wards. 5 P.M. Dr. Ball: Middle Ear Suppuration and its Treatment (with lantern slides). (Lecture I.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. A. Turner: Hydrocephalus.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Prof. W. Stirling: Food and Nutrition. (Lecture VI.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Mr. H. W. Carson: Diseases of the Testis.

WEDNESDAY (15th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Erasmus Wilson Lecture:—Mr. J. Sherren: The Distribution and Recovery of Peripheral Nerves studied from Instances of Division in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. M. White: Clinique. (Surgical.) 5.15 P.M. Lecture:—Dr. P. Stewart: The Cerebro-Spinal Fluid and its Diagnostic Importance.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. Robinson: On Gynaecology.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—Dr. H. Mackenzie: Mitral Stenosis.

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture:—Mr. R. Johnson: Some Forms of Surgical Tuberculosis in Children.

THURSDAY (15th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Hall, Pall Mall East).—5 P.M. Goulstonian Lecture:—Dr. H. B. Shaw: Auto-intoxication.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture:—Dr. Langdon Brown: Therapeutical Applications of Adrenalin and Allied Bodies.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. Mr. Keefley: Demonstration in Surgical Wards. 5 P.M. Mr. Keefley: Contribution from a Surgical Point of View.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture.—Dr. McCann: The After-treatment of Gynaecological Operations.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Fungous Diseases of the Skin.—I. *Tinea Circinata*, *Impetigo Versicolor*; II. *Erythrasma*; III. *Actinomycosis*; IV. *Madura Foot*. (Chamberlain Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture.—Dr. F. W. Price: The Pathology and Treatment of Mitral Disease. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.C.).—4 P.M. Lecture.—Mr. Waugh: Pharyngeal Abscesses.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Mr. F. Darwin: The Physiology of Plants. (Lecture III.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. G. F. Still: Infant Feeding, with Special Reference to the Production of Rickets.

WESTMINSTER HOSPITAL (Broad Sanctuary, S.W.).—5 P.M. Extra Lecture in the Course of Applied Physiology.

MEDICAL SOCIETY'S ROOMS (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Demonstration.—Dr. C. Eastman: Heterogeneous Processes (with lantern slides). Followed by an open discussion.

FRIDAY (16th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Lectures on Nerve Lesions.—Mr. J. Sherrin: The Distribution and Recovery of Peripheral Nerves studied from Instances of Division in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. Mr. M. Yearles: Clinique. (Bar.)

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. Dr. Ball: Middle Ear Suppuration and its Treatment (with lantern slides). (Lecture II.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture.—Mr. Ballance: Acute Infection of Brain and Membranes.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Mr. W. Duddell: How to Improve Telephone.

SATURDAY (17th).—ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M. Prof. J. J. Thomson: The Corpuscular Theory of Matter. (Lecture III.)

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 2 P.M. Dr. Beckett: Demonstration in Medical Wards.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

THE LANCET AT THE RAILWAY BOOKSTALLS.

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls.

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Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local agents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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METEOROLOGICAL READINGS.

(Taken daily at 8.20 a.m. by Stewart's Instruments.)

THE LANCET OFFICE, MAR. 8th, 1906.

Date.	Parameter referred to Sea Level and F.F.	Direction of Wind.	Rate of Fall.	Solar Radiation in Vacuum.	Max. Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 2	29.70	W.	—	66	52	45	50	51	Rainy
" 3	30.41	S.W.	0.01	76	49	35	36	37	Foggy
" 4	30.43	W.	—	87	53	37	39	42	Fine
" 5	30.10	S.W.	—	76	53	36	38	41	Fine
" 6	30.30	S.W.	—	95	65	43	50	52	Cloudy
" 7	30.27	S.W.	—	105	67	43	48	51	Fine
" 8	29.92	W.	—	54	51	47	47	50	Overcast

During the week marked copies of the following newspapers have been received:—*Lancashire Daily Post*, *Jarrow Gazette*, *Derbyshire Times*, *Morning Leader*, *Daily News*, *Daily Telegraph*, *Cork Constitution*, *Plymouth Eastern Morning News*, *Standard*, *Daily Chronicle*, *Malvern Gazette*, *Scarboro' Mercury*, *Hackney Mercury*, *Islington Gazette*, *Islington News*, *Birkenhead Advertiser*, *Manchester City News*, *Leamington Spa Courier*, *Dublin Weekly Times*, *Manchester Chronicle*, &c.

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The Erasmus Wilson Lectures

ON

THE DISTRIBUTION AND RECOVERY OF PERIPHERAL NERVES STUDIED FROM INSTANCES OF DIVISION IN MAN.

Delivered before the Royal College of Surgeons of England on March 12th, 14th, and 16th, 1905.

By JAMES SHERREN, F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE LONDON HOSPITAL; SURGEON TO THE POPULAR HOSPITAL FOR ACCIDENTS.

LECTURE I.

Delivered on March 12th.

MR. PRESIDENT AND GENTLEMEN,—Sir William Savory¹ in 1868, writing of the retention of sensibility after division of the musculo-spiral nerve, said: "The question is one which appears to be beyond the reach of dissection, and perhaps it will be best answered hereafter by observation and experiment in cases like the present one." 20 years later Weir Mitchell² emphasised the same fact: "The anatomists have somewhat misled us by their statements as to the innervation of fixed areas by certain nerves; whereas it is to the clinical inquirer that anatomy must look for a knowledge of the surface areas of nerve distribution." I have approached the subject of the distribution of the peripheral nerves from the clinical standpoint as suggested by these authorities.

The material which I have used for these lectures is drawn from a personal study of 175 cases of nerve injury—many of them watched for a considerable time and several for more than three years. This investigation was carried out in conjunction with my friend and colleague Dr. Head, and I shall draw largely upon the conclusions at which we arrived. The cases we then investigated have been brought up to date and several new ones added. I would again thank those who alone made that work and these lectures possible, my colleagues at the London Hospital and at the Poplar Hospital, for the generous way in which they allowed us to use their cases.

That considerable difference of opinion exists with regard to the effect of division of a peripheral nerve upon sensation is evident from the following statements drawn from the writings of those who have studied the subject. Bowley³ in his book on "The Injuries and Diseases of Nerves" writes: "From my own observations I can have no doubt that in most cases of neurotomy a complete anæsthesia is certainly present and that there are all grades of gradually increasing sensation till we reach a point at which it becomes exceedingly difficult to say for certain that the tactile sense is not due to a regeneration of the divided nerve." Thorburn and Williamson state⁴: "Sensation of all kinds is abolished but is often partially restored by the agency of collateral branches. The margins of the anæsthesia are thus rarely quite sharply defined." Gowers and Taylor say⁵: "There may be no loss even when a nerve is completely divided." Turning now to continental writers, Tillmans⁶ has said: "It is not possible to limit the territories of different nerves sharply from one another"; Kölliker,⁷ in his work on "Injuries and Surgical Diseases of the Peripheral Nerves," wrote: "I would here state that absence of anæsthesia is no proof that a sensory or mixed nerve is not injured"; while Richhorst,⁸ in a paper on the Distribution of "Injuries of the Nerves in Man, made the statement that 'injuries of the larger nerve trunks or an interruption of continuity from other causes give, as a rule, too little information on the subject.'

I hope to clear up some of the uncertainties which undoubtedly exist and shall endeavour to show how they have arisen. There are four methods available for the study of the distribution of the peripheral nerves in man: (1) the anatomical by dissection, and three which can be employed in the living subject, (2) the result of section; or (3) stimulation of the nerve the distribution of which we wish to study; or (4) of section of the nerves surrounding the area we wish to map out.

The earliest method of study was the anatomical but it soon became evident that the results obtained did not correspond to those observed as the consequence of section of the nerve. Study of their distribution as revealed by the loss of sensation following injury has been practised in a desultory manner for many years but the records obtained varied with the methods of testing and were vitiated by the inclusion of cases not verified by operation. In all the cases which I shall employ to map out the area of distribution of the various nerves the nerve was seen to be divided at operation. This method, invaluable as it is to the surgeon in his interpretation of the consequences of nerve injury, gives us only the "exclusive supply" of the nerve—that is, the area to which it *alone* sends fibres; it tells us nothing of the much larger area to which it sends fibres in common with other nerves. To obtain this, the "full" area of supply, we must use the results given us by a study of the sensibility remaining after the division of surrounding nerves; this method of "residual sensibility" may be compared with the results obtained by stimulation of the trunk of the nerve.

The method of residual sensibility was first employed by Mr. Jonathan Hutchinson, sen.,⁹ to determine the extent of the dorsal surface of the fingers supplied by the radial nerve. Sherrington¹⁰ used this method in his well-known work on the distribution of the posterior roots and applied it, in man, to map out the distribution of the internal saphenous nerve.

It has been known for long that stimulation of the trunk of a nerve causes pain referred to its peripheral distribution. It is less generally known that this pain may be accompanied by definite tenderness mapping out the full distribution of the affected nerve.¹¹ Cheselden,¹² writing of the distribution of the ulnar nerve, remarked that "the course of this nerve is sufficiently felt when we lean on our elbow, by the insensibility and pricking pains in the parts to which it is distributed." Weir Mitchell,¹³ following the example of Waller,¹⁴ stimulated the ulnar nerve behind the internal condyle with a mixture of ice and salt; he experienced an intense burning pain over an area larger than that which later became anæsthetic as the result of the continued action of the freezing mixture. Most peripheral nerves, however, are too deeply situated to admit of this method of stimulation. But after incomplete injuries, particularly those due to gunshot wounds, marked tenderness may arise in the area supplied by the affected nerve. This area of hyperalgesia is always more widespread than the anæsthesia which results from division of the nerve and corresponds to its "full" distribution.¹⁵

When a peripheral nerve is divided a change takes place in the sensibility of the parts supplied by it. It has long been known how varied this loss may be, in one case corresponding to what was considered from the point of view of anatomy to be its area of supply, in another falling, apparently, far short of it.

After section of a mixed nerve, such as the median at the wrist, if no tendons have been divided at the same time, the patient is able to appreciate those stimuli commonly called tactile. A touch with a pencil, a piece of paper, the finger, or anything which deforms the skin, may be not only readily appreciated but correctly localised. When pricked with a pin the patient knows that he has been touched but fails to perceive the sharpness of the stimulus. Létitiant¹⁶ recognised this and named it "mediate sensibility"; Laborde¹⁷ pointed out the same fact 20 years later. I shall speak of it as deep sensibility or deep touch. But if tendons are divided at the same time or the section involves the nerve

¹ The Lancet, August 1st, 1868, p. 442.

² Brain, vol. I., p. 287.

³ Injuries and Diseases of Nerves, p. 64.

⁴ Encyclopædia Medica, 1901, vol. viii., p. 222.

⁵ Diseases of the Nervous System, third edition, vol. I., p. 78.

⁶ Archiv für Klinische Chirurgie, 1882, Band xxvii., S. 1.

⁷ Deutsche Chirurgie, 1882, 24b., S. 22.

⁸ Zeitschrift für Klinische Medizin, 1883.

⁹ London Hospital Reports, 1856, p. 319.

¹⁰ Philosophical Transactions of the Royal Society, B, 190, p. 102.

¹¹ Clinical Journal, June 25th, 1906.

¹² Anatomy of the Human Body, tenth edition, 1773, p. 243.

¹³ Injuries of Nerves, p. 69.

¹⁴ Proceedings of the Royal Society of London, vol. II., p. 433, vol. xii., p. 89.

¹⁵ Head and Sherrren: Brain, Summer Number, 1905, p. 245.

¹⁶ Traité des Sections Nerveuses, Paris, 1873, p. 43.

¹⁷ Bulletin de l'Académie de Médecine, 1893, p. 476.

FIG. 1.

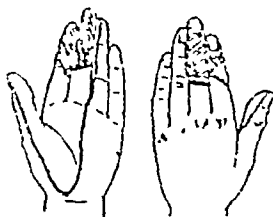


FIG. 2.

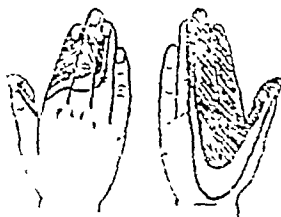


FIG. 3.

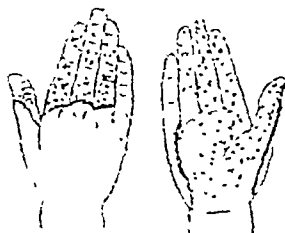


FIG. 4.

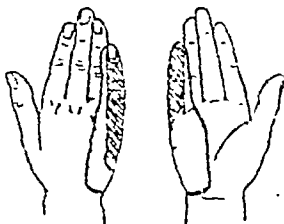


FIG. 5.

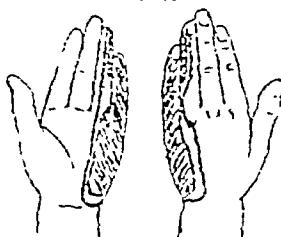


FIG. 6.



FIG. 7.

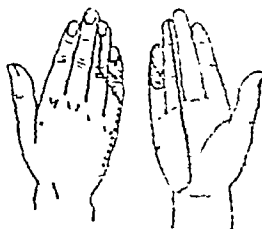


FIG. 8.

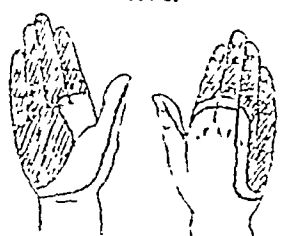


FIG. 9.

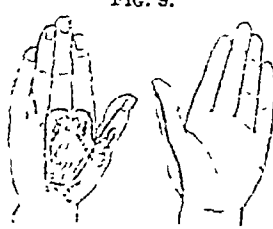


FIG. 10.

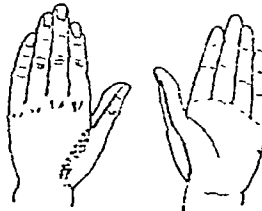


FIG. 11.

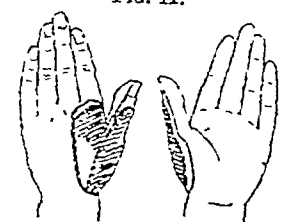
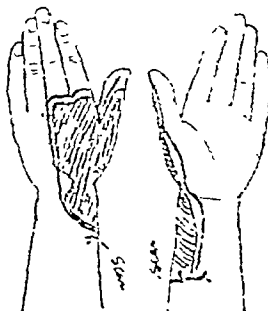


FIG. 12.



In all the diagrams the shaded area represents "loss of sensibility to prick and to light touch"; the unshaded, "loss of sensibility to light touch." Fig. 1 and Fig. 2: Loss of sensibility produced by division of the median nerve. (Note wide variation in loss of sensibility to prick.) Fig. 3: "Full" supply of the median nerve with sensibility to prick deduced from "residual sensibility." Fig. 4 and Fig. 5: Loss of sensibility produced by division of the ulnar nerve. Fig. 6: "Full" supply of ulnar nerve deduced from residual sensibility. Fig. 7: Loss of sensibility produced by division of the median and ulnar nerves. Fig. 8: Loss of sensibility produced by division of the whole musculospiral nerve. (Note the indefinite boundary towards the radial side in comparison with Fig. 11 and Fig. 12.) Fig. 9: Loss of sensibility to light touch produced by division of the radial nerve in the lower third of the forearm. (Note its ill-defined boundary on the dorsum towards the ulnar side.) Fig. 10: Loss of sensibility produced by division of the radial nerve and posterior branch of the external cutaneous nerve. Fig. 11: Loss of sensibility produced by division of the radial and external cutaneous nerves. In Fig. 11 and Fig. 12 the triangular areas on the dorsum, bounded towards their ulnar side by a continuous line and towards their radial side by a dotted line, represent the area sensitive to light touch but insensitive to prick.

the movement that it is produced by the adductors and flexors of the thumb and not by the opponens. Palpation over the insertion of the muscle into the metacarpal bone of the thumb is the only way to avoid error in these cases. After division of the nerve at the elbow the paralysis is less than would be expected and falls principally upon the index and middle fingers and the thumb. In one patient²⁵ in whom I performed primary suture of the nerve at the wrist I could discover no paralysis of the thumb muscles before operation. At the operation I found that the branch supplying these muscles came off in the lower third of the forearm and was uninjured. I have been unable to find any mention of this abnormality in anatomical literature but Bowlby²⁶ has recorded a somewhat similar instance.

The effect of division of the median nerve upon motion and sensation gave rise to much controversy, particularly in France in the sixth and seventh decades of the nineteenth century. In one week in June, 1864, two cases of primary suture were reported at the Société de Chirurgie and the Académie des Sciences. The first²⁷ was a patient upon whom Nélaton had operated, resecting a portion of the nerve with a neuroma; the second, a case of accidental division at the wrist, in which Laugier²⁸ had performed the operation. Both were regarded as cases of "primary union" and resuscitated the doctrine to which Waller's work had seemed to give the death blow. It is instructive to note that in Laugier's case, three days after suture, although tactile sensibility had returned, pain and temperature were not perceived. It is evident that the so-called return of function was the perception of deep sensibility by fibres which had not been severed. Three years later Richet²⁹ in a case of accidental division of the nerve, discovered that sensation was preserved in the median area, the palmar surfaces of the index and middle fingers alone showing numbness. His method of testing explains the small amount of sensory loss obtained. An account of this has been preserved in a letter written to THE LANCET by Lockhart Clarke,³⁰ who saw the case; he wrote: "With a piece of stiff paper rolled up into the form of a stick [he] tickled in the most perplexing way different parts of the fingers and palm supplied by the median nerve. In almost every instance the patient mentioned, without hesitation and with great accuracy, the particular spot touched. Nevertheless, sensibility, though not abolished, was somewhat impaired, as was evident when a pin was used instead of paper to excite the skin. The application of heat and cold to the hand was not attended with very satisfactory results." Richet³¹ also gives us a most interesting account of Nélaton's case and states that he (Nélaton) observed the retention of sensibility before the insertion of the sutures but in spite of his astonishment said nothing. It is also reported of Laugier's case³² that sensibility was not tested before the nerve was sutured, that Vulpian could find no trace of sensation in the median area 15 days later, and that even after 17 months Magnien found that sensation was not normal. Thus we see the slender foundation on which these cases of so-called "primary union" rested. Since that date other instances of retention of function after division of the nerve have been recorded. Thus, Nott³³ excised a tumour of the forearm, together with five inches of the median nerve, "neither paralysis nor loss of sensation resulting"; no further details are given. In Kraussold's³⁴ well-known case a portion of the nerve was excised with a neuroma in the lower third of the arm. No alteration in sensibility is said to have resulted. With regard to motion he reported that the thumb and index fingers could not be flexed but opposition and abduction of the thumb were possible. The patient was five and a half years old, not an age compatible with minute sensory examination, and as movements are recorded and not the action of the affected muscles, it seems certain that the case presented the usual symptoms of complete division of the nerve. Several other cases have been published, the last in 1900³⁵ with a further account in 1903,³⁶ but in no instance are the records perfectly satisfactory. All these cases can be explained by a

careful study of the loss of the different forms of sensibility which results from division of the nerve.

THE ULNAR NERVE.

The ulnar nerve is particularly liable to injury at the elbow and at the wrist. Owing to its position behind the internal condyle the injury usually results from pressure, suddenly applied, such as direct blows, or gradually, by callus or displaced bone. Consequently fewer opportunities present themselves for studying the effects of complete division in this situation. In connexion with these injuries at the elbow I would draw attention to those cases of interference with the functions of the nerve many years after an injury, usually a fracture of the lower end of the humerus. Panas³⁷ first described these cases in 1878 and gave a full account of a man aged 40 years who had sustained a fracture of the lower end of the humerus 13 years previously. For six months before coming under observation he had noticed gradually increasing interference with the functions of the nerve. Bowlby³⁸ mentions this case in his book and describes a similar one. Some years later Weber³⁹ reported two instances; in one the injury dated back 27 years. These cases seem to have escaped general recognition. Payr,⁴⁰ in 1900, writing on lesions of the ulnar nerve in injuries of the elbow, does not allude to this type of injury. To a case of this description I owe one opportunity of studying the effects of uncomplicated division of the ulnar nerve at the elbow. In this patient the functions of the nerve were so greatly interfered with that I resected the damaged portion. An accidental wound in this region gave us a further opportunity of investigation.

At the wrist wounds with glass are responsible for most of the injuries. So far as the loss of cutaneous sensibility is concerned it makes no difference at what level the nerve is divided above the point at which its dorsal branch is given off; even division in the axilla does not increase the insensitive area; but the extent of the loss of deep sensibility may be markedly increased. Sensibility to light touch is lost over both surfaces of the little and half the ring fingers with a corresponding portion of the palm and dorsum of the hand. This area is liable to very little variation and has the characteristics which I described in speaking of the median nerve. An area insensitive to prick is present over the little finger back and front and a portion of the ulnar palm varying from a strip on its extreme border to an area almost as extensive as that of the loss of light touch (Figs. 4 and 5). In the patient from whom Fig. 4 was taken⁴¹ the nerve was divided at the elbow, in Fig. 5⁴² at the wrist. In the other instance of division of the nerve at the elbow the loss resembled that seen in Fig. 5.

Accidental division of the nerve at the wrist is rarely unaccompanied by division of tendons; such a case has not come under my notice but in two instances the conditions were closely allied to this. In one patient⁴³ several inches of the nerve had been removed in the forearm in the hope of curing an inveterate neuralgia. Deep sensibility was lost over the terminal two phalanges of the little finger, back and front. On the other hand, division of the nerve at the elbow produced an area insensitive to pressure as great as that insensitive to prick.

It might be supposed that the internal cutaneous nerve helped to supply the intermediate zone, which appears after division of the nerve, with sensibility to prick. This is not the case, for in a patient in whom the internal cutaneous nerve was resected with a recurrence of a neuroma after previous division of the ulnar nerve no increase of the area of loss of sensibility to prick resulted.⁴⁴

Fig. 6, illustrating the full supply of the ulnar nerve deduced from residual sensibility, is from a patient⁴⁵ who suffered division of his median and radial nerves, together with the external cutaneous in the lower third of the forearm, and from instances of division of the musculospiral. But it must be remembered that it varies in extent particularly on the palm. This area corresponds very closely to that which became hyperalgesic as the result of incomplete division of the nerve.

The nerve is frequently divided below the point at which

²⁵ Head and Sherren: Loc. cit., Case 5.

²⁶ Injuries and Diseases of Nerves, p. 173.

²⁷ Bulletin de la Société de Chirurgie, June 22nd, 1864.

²⁸ Comptes Rendus, 1864, Tome lviii., p. 1139, Tome lix., p. 115.

²⁹ L'Union Médicale, Nov. 14th, 1867.

³⁰ THE LANCET, Dec. 14th, 1867.

³¹ L'Union Médicale, Nov. 14th, 1867.

³² Weir Mitchell: Injuries of Nerves, p. 239.

³³ Ibid., p. 240.

³⁴ Archiv für klinische Chirurgie, Band xxi., S. 448.

³⁵ Penzance et Mally: Revue de Chirurgie, 1900, vol. xxii., p. 655.

³⁶ Durante: Nouvelle Iconographie de la Salpêtrière, 1903, p. 321.

³⁷ Archives Générales de Médecine, 1878, p. 5.

³⁸ Injuries and Diseases of Nerves, p. 255.

³⁹ Deutsche Zeitschrift für Nervenheilkunde, 1899, S. 181.

⁴⁰ Deutsche Zeitschrift für Chirurgie, 1900, S. 167.

⁴¹ Head and Sherren: Case 18.

⁴² Ibid., Case 15.

⁴³ Ibid., Case 25.

⁴⁴ Ibid., Case 42.

its dorsal branch is given off. In Bowlby's "experience it was most often injured above this point; but of the accidental divisions of the nerve at the wrist which have come under my notice it was affected an equal number of times in each situation. Very little attention has been paid to injury here. Among the recent text-books of surgery and diseases of the nervous system Rose and Carls⁴⁵ and Oppenheim⁴⁶ alone draw attention to the fact that in division of the nerve immediately above the wrist the anaesthesia is confined to the palm of the hand and the dorsal surfaces of the phalanges. Yet it is the nerve injury, after the median, which is most often overlooked. The limited degree of disturbance of sensation which it produces accounts for this.

Light touch cannot be appreciated over an area on the palm (Fig. 7) corresponding exactly to that which is affected after section of the whole nerve. Its palmar boundary is extremely definite, but at its ulnar border it gradually merges into the normal sensibility of the dorsum of the hand; there is here no well-defined boundary between sensitive and insensitive parts. On the dorsum, the terminal two phalanges of the little and half of the terminal two phalanges of the ring fingers usually become insensitive to these stimuli. Deep sensibility is everywhere retained. The extent of the area insensitive to prick varies greatly: in some cases there is no portion of the affected area where a prick is not perceived. Usually the terminal phalanx of the little finger is insensitive but an area almost as large as that of the loss of sensibility to light touch may be present. This area of loss of sensibility to prick may vary in extent from time to time in the same patient. In a girl⁴⁷ in whom at the operation I discovered that the ends of the nerve had been united to tendons the extent of insensibility to prick varied from a small area on the palm to one almost corresponding to that of the loss of sensibility to light touch.

Division of the nerve at the elbow causes paralysis of the flexor carpi ulnaris and the ulnar half of the flexor profundus digitorum, in addition to certain of the intrinsic muscles of the hand. Of the affected forearm muscles the flexor carpi ulnaris is the only one the action of which can be seen definitely to be lost, but it is compensated for somewhat by the action of the palmaris longus. The intact tendons of the flexor sublimis are unable to flex fully the little and ring fingers. This paralysis of the forearm muscles may be easily overlooked.

With regard to the hand, certain of the movements usually produced by the paralysed muscles can be imitated. Adduction of the thumb—that is, movement of the thumb towards the second metacarpal bone in a plane at right angles to that of the palm, cannot be performed, but when the patient squeezes the observer's finger between his index finger and thumb, a movement occurs which resembles adduction. The muscle which produces it is, in some instances, the long extensor, in others the long flexor of the thumb; it is accompanied in the former case by extension of the whole thumb and outward rotation, in the latter by flexion of the terminal phalanx and palmar rotation. But this is not the only movement that can be imitated. Abduction of the index and little fingers can be performed to a limited extent by means of their extensor tendons, but the movement is always accompanied by an increase of the extension pregent as the result of the lesion. The contraction of the first lumbrical can sometimes be felt in the first interosseous space and its reaction to the interrupted current may simulate that of the first dorsal interosseous. If these facts are borne in mind no difficulty should exist in interpreting the results on motion of the division of this nerve.

There appears to be great unanimity with regard to the area which becomes insensitive after division of the whole nerve. We read little of its division without sensory or motor paralysis, or of instances of "primary union." There are two cases of "division at the elbow without marked motor or sensory paralysis" that are widely quoted, those of Pirogoff and Kiallmark.⁴⁸ The former⁴⁹ is reported as follows: "To my astonishment I saw no paralysis of the fourth or fifth finger after complete division of the softened ulnar nerve in a resection of the elbow-joint. . . . The fingers retained their sensibility, whether completely or not I was

not able to ascertain from the patient." The last part of this sentence is usually omitted. Kiallmark⁵¹ reports his as follows: "Protruding from the upper side of the wound was a piece of whitish tissue which I could not replace; I therefore removed it. . . . On examining what I had cut off I found it to consist of about one-eighth of an inch of the trunk of the ulnar nerve with the commencement of a branch given off from it. Beyond a little numbness of the little and ring fingers he never complained of the slightest impairment of sensibility or movement in the hand or forearm and in a few days resumed his work as a chimney-sweep."

I think it will be agreed that these cases are not suited to the purpose to which they have been put.

The figure which Bowlby⁵² gives, translated into terms of light touch and prick, agrees with what I should consider the average loss of sensibility, as does that given by Léclercq.⁵³

Some difference of opinion seems to exist with regard to the extent of sensory loss on the dorsum of the hand. Bernhardt⁵⁴ and others include the ulnar half of the basal phalanx of the middle finger and all the dorsum to the ulnar side of a line drawn upwards from this. On no occasion have I seen so extensive an area affected.

In conclusion, the whole ulnar nerve supplies with sensibility to light touch one and a half fingers and the corresponding portion of the palm and dorsum of the hand. With sensibility to prick exclusively, and in common with other nerves, the little and ring fingers, the palm, with the exception of the thenar eminence, and on the dorsum that portion of the hand to the ulnar side of a line drawn through the axis of the middle finger.

THE MEDIAN AND ULNAR NERVES.

Division of the median and ulnar nerves together at the wrist is by no means an uncommon accident. The area insensitive to light touch occupies the whole of the palm and palmar surfaces of the thumb and fingers. Its boundary towards the radial side is that seen after division of the median nerve. (Fig. 8.) On the dorsal, as on the palmar surface, the loss of sensibility to light touch corresponds exactly to that produced by division of the ulnar nerve, added to that caused by section of the median. The loss of sensibility to prick varies with the extent to which the radial portion of the palm is supplied with this form of sensibility from the radial and external cutaneous nerves. Usually the loss of sensibility to prick extends from the ulnar side to the cleft between the index and middle fingers; the palmar surface of all the fingers is affected. On the dorsal surface the area insensitive to these stimuli does not differ from the sum of that which results from division of the nerves separately. In those cases in which the median nerve supplies exclusively a large portion of the radial half of the palm and palmar surface of the thumb the area of loss is correspondingly greater. Fig. 8 also gives the full supply of the radial and external cutaneous nerves on the palm of the hand. After the usual accidental division of the median and ulnar nerves with many tendons, deep sensibility is abolished over an area as extensive as that insensitive to prick. To ascertain the extent of insensibility to deep touch it is necessary to investigate a case uncomplicated by division of tendons. Such an opportunity presented itself in a patient⁵⁵ in whom the median and ulnar nerves and many tendons had been divided. The tendons had been sutured immediately after the accident but the nerve lesion overlooked. After the operation for secondary suture, performed six months after the injury, he could appreciate and localise deep touch correctly over the whole area insensitive to prick with the exception of the palmar aspect of the little finger and the greater part of its dorsal surface, an area which becomes insensitive to deep touch whenever the whole ulnar nerve is divided at the wrist.

THE MUSCULO SPIRAL NERVE.

It has become one of the commonplace of surgery that the musculo spiral nerve may be divided without causing any marked loss of sensibility. This was first recorded by Savory⁵⁶ and I cannot do better than quote his account: "When testing the sensibility of that portion of the skin

⁴⁵ Injuries and Diseases of Nerves, p. 64.
⁴⁶ Manual of Surgery, fourth edition, p. 319.
⁴⁷ Lehrbuch für Nervenkunde, Auflage 3, 1902.
⁴⁸ Head and Sherren, Case 21.
⁴⁹ Grundzüge der Chirurgie, S. 371.

⁵¹ THE LANCET, Nov. 30th, 1857, p. 631.
⁵² Injuries and Diseases of the Nerves, Figs. 15, 16.
⁵³ Traité des Sciences Neurologiques, p. 24.
⁵⁴ Die Erkrankungen der Peripherischen Nerven, Theil I., taf. 3.
⁵⁵ Head and Sherren, Case 23.
⁵⁶ THE LANCET, August 1st, 1858, p. 142.

of the hand which is supplied by branches of the radial nerve we were not a little astonished to find that it was but little impaired. When the skin was lightly pricked the man cried out sharply. He could distinguish in the same region two points of contact when they were not more than an inch apart, both in the long and in the transverse axis of the hand; but when they were closer than this on any part of the back of either hand or forearm he confused them, and, indeed, in comparing the sensibility of this region with that of the inner portion of the back of the hand and two inner fingers or with the corresponding part of the opposite hand no very striking difference could be detected. All portions, too, of the back and sides of the middle finger appeared to be equally sensitive. He could distinguish also between contact of hot and cold bodies in this region as well as in other parts."

Many similar cases have been recorded. Among them are two cases reported by Kennedy⁵⁷ in which the nerve was divided in the lower third of the arm without producing marked sensory change, and one reported by Parry⁵⁸ in which two inches of the nerve were destroyed at the elbow without producing any definite loss of sensibility. Ledderhose⁵⁹ reports a case in which the nerve was ruptured as the result of a compound fracture of the lower end of the humerus.

I am convinced that this nerve may be completely divided in the lower third of the arm without producing loss of sensation that can be discovered by any method of testing yet devised.

The following is a case⁶⁰ of this character. A boy, aged nine years, suffered a complete section of his musculo-spiral nerve just above its point of division. Both before and after I had performed secondary suture no loss of sensibility could be detected to the most delicate tests. But this statement applies only to division of the nerve below the point at which its external cutaneous branches are given off. Division above this point produces a definite loss of sensation. But the amount of this loss varies in different patients according to the relative size of the posterior branch of the external cutaneous nerve. In two patients in whom the musculo-spiral nerve was injured in the axilla as the result of a gunshot wound all forms of cutaneous sensibility were absent over a large area on the dorsum of the hand. Fig. 8 shows the extent of this loss in one patient; in the other it was a little less. This statement is borne out by a study of the recorded instances of verified division of the musculo-spiral nerve in the upper part of the arm. Among them I might mention two cases reported by Mr. R. Clement Lucas⁶¹ of division three and five inches below the point of the shoulder, the case recorded by Kennedy,⁶² and Reger's⁶³ case in which the nerve was divided just below the insertion of the deltoid. In all these instances definite loss of sensibility resulted. Fessler⁶⁴ says that "the integrity of radial sensibility after injury to the musculo-spiral nerve in fractures of the shaft of the humerus is, in my opinion, most often met with when the fracture injuring the nerve is in its lower third."

As would be anticipated, division of the radial nerve in the upper half of the forearm produces no loss of sensibility. I have had the opportunity of examining patients in whom portions—in one case two and a half inches—of the nerve had been resected without causing sensory loss. On the other hand, division in the lower third of the forearm has a definite effect upon sensibility. Fig. 10 is taken from a patient⁶⁵ in whom I divided the nerve just after it had passed beneath the tendon of the supinator longus. This produced a loss of sensibility to light touch, with well-defined limits towards the thenar eminence and on both borders of the thumb but on the ulnar side ill-defined and fading gradually into the normal sensibility of the dorsum of the hand. This corresponds to the result seen in several cases after accidental section in this situation. At a second operation a few days later I divided the posterior branch of the external cutaneous nerve at the elbow. This resulted in an extension of the area of insensibility

to light touch towards the ulnar side and an area of loss of sensibility to prick made its appearance. Deep sensibility was everywhere present (Fig. 11).

We are now in a position to study the nerve-supply of the "radial area" of the dorsum of the hand. Nowhere are the results as obtained by dissection more at variance with those found after operation. No one nerve can be said to supply this area in a manner similar to the supply of the ulnar area of the dorsum by the ulnar nerve. Two nerves take part, the musculo-spiral, including its external cutaneous branches and the external cutaneous (musculo-cutaneous) nerve. But the extent supplied by the branches of the musculo-spiral and by the external cutaneous nerve seems to vary.

Thus division of the musculo-spiral nerve above the point at which its external cutaneous branches are given off produces an area of loss of sensibility to light touch and to prick on the dorsum of the hand. This may be almost as extensive as the "radial area" but often falls short of this on its radial side and varies in extent with the respective sizes of its external cutaneous branch and the external cutaneous branch of the external cutaneous nerve.

Division of the radial together with the external cutaneous nerve produces an area of loss of sensibility, well defined towards the thenar eminence, ill defined and of varying extent towards the ulnar side. Fig. 12 was taken from a patient⁶⁶ in whom, as the result of an accidental wound, the radial and external cutaneous nerves were divided in the lower third of the forearm. By comparison with Fig. 11 we see the variation in the extent of skin supplied by the external cutaneous branch of the musculo-spiral.

Before we discuss fully some peculiarities in the resulting sensory loss it will be well to review the reasons which have been given for the absence of loss of sensibility after division of the musculo-spiral nerve. Kennedy considered⁶⁷ that the cases of retention of sensation after division of this nerve were due to abnormal smallness of the radial, its place being taken by the median. Létievant does not draw particular attention to it but considers it as an example of supplementary sensibility. Henriksen⁶⁸ says that "slight or no anaesthesia after division of the musculo-spiral has given rise to the opinion that it does not supply an area alone." Continuing, he says: "This is not confirmed by my cases. When the musculo-spiral nerve has seemed to be different from other nerves, this must be supposed to be owing to the character of the injuries to which this nerve is exposed." But the cases which he has published do not bear out these statements; he has described no instance of uncomplicated section of the musculo-spiral nerve. Zander⁶⁹ says that the radial and ulnar nerves do not alone take part in the sensory supply of the dorsum of the hand but that the musculo-cutaneous and lower external cutaneous branch of the musculo-spiral also share in its supply. Savory considered the peculiarity due to anastomoses with the external cutaneous. Thus, Savory and Zander had a closer conception of the nerve-supply of this region than other and later observers.

It appears that the nerve fibres which supply the radial area with light touch do not run in any one nerve branch and that division of the musculo-spiral below its cutaneous branches or of the radial is comparable to division of a branch of a nerve which may produce no demonstrable effect upon sensation. But it is no exception to the rule that I have laid down that division of a peripheral nerve, meaning thereby the whole nerve and not one of its branches, produces a definite area of loss of light touch larger than that of insensibility to prick. For division of the whole musculo-spiral produces an area of insensibility to light touch and prick which is well defined towards its ulnar side but has an ill-defined boundary on its radial, the area insensitive to light touch being greater than that insensitive to prick. In some cases division of the whole musculo-spiral may produce anaesthesia in the forearm; so far I have not observed this.

To return to the phenomena observed after division of the radial and external cutaneous nerves. We had several opportunities of investigating them with great care. Division either at the wrist or at the elbow produces a curious dissociation of sensibility. In Figs. 11 and 12 it will be seen that this area of dissociated sensibility was roughly of a triangular shape. Prick and the extreme degrees of heat and cold

⁵⁷ Brit. Med. Jour., 1888, vol. II., p. 1399.

⁵⁸ Glasgow Medical Journal, 1897.

⁵⁹ Deutsche Zeitschrift für Chirurgie, 1887.

⁶⁰ Head and Sherren, Case 43.

⁶¹ Guy's Hospital Reports, 1889, p. 1.

⁶² Brit. Med. Jour., vol. II., 1898, p. 1999.

⁶³ Berliner klinische Wochenschrift, 1894, 21.

⁶⁴ Deutsche Zeitschrift für Chirurgie, Band xxviii., Heft 1-3, S. 50.

⁶⁵ Head and Sherren, Case 44.

⁶⁶ Head and Sherren, Case 47.

⁶⁷ Brit. Med. Jour., vol. II., 1888, p. 1399.

⁶⁸ THE LANCET, April 11th, 1903, p. 1020.

⁶⁹ Berliner klinische Wochenschrift, 1890, No. 2.

could not be appreciated over the whole affected area, but light touches with cotton-wool and the minor degrees of heat and cold were recognised. This dissociation of sensibility is important in the theoretical consideration of sensation and I shall have to return to it later.

Deep sensibility may be studied here with great exactitude, or a large area is present insensitive to all cutaneous stimulation. Touches with the head of a pin or even with a piece of cotton-wool rolled up tightly and applied vertically can be well appreciated and localised, but the patient cannot distinguish between the head and point of a pin or between a pin and the end of a cylindrical rod three centimetres in diameter.

When the whole external cutaneous nerve is divided a definite area of sensory loss makes its appearance. On the flexor surface of the forearm its boundary is well defined and corresponds to a line drawn upwards from the cleft between the middle and ring fingers. At this line the loss of sensibility to light touch and to prick is coterminous. Posteriorly no such definite line is produced and the area of loss is limited to the radial border of the forearm; its border is ill-defined and sinuous, gradually fading into parts of normal sensibility. Division of its posterior branch may produce no loss of sensation in the forearm, as in the case already quoted; section of the anterior in the lower half of the forearm led to no loss in a patient who was under my care.⁷⁰

If the internal cutaneous nerve be divided at the elbow loss of sensibility results, bounded towards the radial side both on the flexor and extensor aspects of the forearm by a well-defined line. This boundary corresponds to a line drawn upwards from the axis of the ring finger to the tendon of the biceps on the anterior surface and to the olecranon on the posterior. Both forms of sensibility are lost up to this line until the region of the wrist is reached; here the area insensitive to prick becomes much smaller than that insensitive to light touch.

It is now possible to describe the nerve-supply of the forearm; on the ulnar side it is simple, the internal cutaneous. On the radial two nerves are responsible, the external cutaneous and the lower external cutaneous branch of the musculo-spiral. There is practically no overlap between the nerves supplying the ulnar (post-axial) half and those supplying the radial (pre-axial) half of the forearm, consequently the full and exclusive supplies of these nerves is identical.

The Milroy Lectures

OR

EPIDEMIC DISEASE IN ENGLAND—THE EVIDENCE OF VARIABILITY AND OF PERSISTENCY OF TYPE.

Delivered before the Royal College of Physicians of London on March 1st, 6th, and 8th, 1906.

By W. H. HAMER, M.A., M.D. CANTAB.,
F.R.C.P. LOND.

LECTURE III.

Delivered on March 8th.

MR. PRESIDENT AND GENTLEMEN,—We have seen that influenza was prevalent in Europe and America during the early years of last century, that it recurred in the "thirties" and "forties," and recurred again in the "nineties"; a close parallel to these waves of influenza is afforded by the outbreaks of "throat distemper" in Europe and America in the "forties" and "seventies" of the eighteenth century and again in the early years and in the "thirties," "sixties," and "nineties" of the nineteenth century. Records which tally closely with our modern delineations of disease do not date far back; even Sydenham in his account of scarlet fever

makes no mention of sore-throat, nor does Sibbald. Morton describes it as a "confluent measles." Willan, Wintringham, and Hillary include cases which would doubtless now be called diphtheria. Like difficulties are met with in the descriptions of Huxham, Fothergill and the Americans, Douglas and Colden, and Bard. All through the eighteenth century this confusion continues and the frequent mention of military eruptions complicates matters not a little. In 1777-78 Levison's and Wintringham's descriptions accord more closely with latter-day conceptions of scarlet fever. As to diphtheria, dimly discernible as "garotillo," "morbis strangulatorius," and malignant, putrid, gangrenous, &c. sore-throat, it was only in 1821 that Bretonneau even gave it its name and it is not until 1855 that scarlet fever and diphtheria are distinguished in our own official returns. Clearly evidence of persistency of type manifested throughout a long period must not be looked for in throat distemper.

In the case of continued fever the difficulties are even greater. Murchison suspects that the old Greek physicians saw and described typhus, relapsing, and enteric fevers, but the early records in this country are very perplexing. The famine fevers, gaol fevers, and later some of the ship and camp fevers were presumably typhus fever, and in the seventeenth century this malady fairly settled down in the towns. It has been suggested that relapsing fever contributed some of the material worked upon by medical writers in 1709 and 1710, and Ratty's description dates from 1739. The final differentiation of enteric fever from typhus is of course a matter of comparatively recent history. Two questions of special interest from an epidemiological point of view stand out very clearly. There is the ability of typhus fever to smoulder—it smouldered among the prisoners who infected those assembled in assize courts⁷¹ in the sixteenth century and it smoulders in London, Liverpool, and Dublin at this day. In the second place, there is the close relationship between relapsing fever and typhus, on which Murchison⁷² commented and Fagge, Thompson, and others have laid stress. The distribution of prevalences of these maladies in time and space is strikingly similar; their relation to famine and their merging into one another in the same epidemic may be also referred to. Ratagilati says: "In epidemics of relapsing fever even before it was properly distinguished from typhus fever, we find records of a low mortality at the beginning of the epidemic, of an increasing mortality as the epidemic advanced, and of a mortality which was highest towards the close of the epidemic. This was particularly noticed in the epidemics of 1817-18 and in 1819; the most probable inference seems, therefore, to be that there was a mixture of cases of relapsing and of typhus fever and that their relative frequency at different periods of the epidemic determined the observed mortality."⁷³

In applying the historical method of inquiry to scarlet fever and diphtheria, and still more to continued fever, the data are obviously less complete than in plague and influenza. The problems, on the other hand, which arise from the bacteriological point of view take perhaps more definite shape. To a still greater extent are divergences of like sort apparent in dealing with tuberculosis. Historically there is little to guide us. The steady decline in the death-rate from pulmonary tuberculosis in the last 50 years has been attributed to the operation of a large number of factors, among which cheaper food and improved hygienic surroundings, inheritance of capacity to resist attack, weeding out of the less resistant, drying of subsoil, cyclical alterations of virulence, segregation of cases, and so on, have especially been mentioned. It is not unlikely that the supposed reduction is to no inconsiderable extent the result of altered nomenclature. In any case the statistics admittedly become very unreliable after proceeding backwards for 40 or 50 years. From the bacteriological point of view the tuberculosis question is, however, most interesting. I do not

⁷¹ The prisoners themselves were known to be ill in some instances; alternatively infection was attributed to "devilishly contrived and obviously papistical plots" (Oxford Black Assizes, 1577).

⁷² Murchison (p. 330) refers to Ratty's statement that "70 of the poorer sort abandoned to the use of whay and God's good providence recovered" (1739).

⁷³ This writer observed in 1859-70 that several patients who had contracted relapsing fever later developed typhus fever, but he did not meet with cases in which typhus was followed by relapsing fever. Recent investigation seems to point to the bug as the common means of conveyance of relapsing fever. In the Congo a disease closely resembling, if not identical with, relapsing fever is conveyed by ticks.

⁷⁰ Head and Sherren, Case 45.
⁷¹ Lectures I. and II. were published in THE LANCET of March 3rd p. 559 and 10th (p. 655), 1906.

propose here to do more than briefly note Arloing's conclusions, to which Dr. H. T. Bulstrode has drawn my attention, to the effect that the various tubercle bacilli "are only varieties of one and the same species and that no marked delimitation separates them" and, again, that they "form a sort of chain in which enter from time to time links bigger than the others, representing, so to speak, the types accepted by some bacteriologists."

It is generally admitted that the persistency of type displayed by measles and small-pox is quite remarkable. For that reason they afford specially promising material for study of short period waves, and in turning therefore to the examination of variability of type these two diseases may with advantage be considered in the first instance. The simplest case is that of the short-period waves of measles. The explosions in towns occur commonly at about biennial intervals, "when the accumulation of susceptible persons is sufficient and the climatic and other internal conditions offer sufficiently small resistance. The mean seasonal wave shows two maxima—two points of least resistance six months apart," and hence the interval between the explosions "when not exactly two years is frequently one and a half or two and a half years" (Whitelegge). The problem (in the case of measles in a large community) is simplified for the reasons that we are dealing with an obligatory parasite. Hence questions of saprophytic growth, of food outbreaks, &c., do not arise. Furthermore, one attack confers almost complete protection.⁵ Again, infection spreads readily from person to person, population being densely aggregated and new susceptible material added in sufficient quantity and with sufficient frequency to favour stable epidemic movement.

I have taken the London figures and assumed a case-mortality of 2½ per cent. By first plotting out weekly figures for periods selected as presenting typical epidemic movement and then superimposing one wave upon another a curve is obtained with a maximum of 6400 cases (160 deaths), declining after an interval of 39 weeks to a minimum of 400 cases (10 deaths) weekly. Such a curve with waves of approximately 18 months period and maxima occurring alternately in summer and in winter furnishes the type to which London measles conforms.

The London population is augmented weekly by addition of some 2500 susceptibles, or, allowing for the comparative insusceptibility of very young infants, and taking into account their high mortality from causes other than measles, say by 2200 susceptibles. Furthermore, the incubation period of measles being approximately a fortnight the 39 weeks (ML) may be looked upon as comprising 19½ such periods. Up to the time of reaching A the number of cases is increasing, it then diminishes; similarly, up to the time of reaching K the cases diminish and then subsequently increase. In passing these points increase is converted into decrease, or vice versa, the tangent to the curve at the instant being horizontal and stationary. It will be apparent, therefore, that at A each case may be regarded as infecting one other case; this will also hold good at K.

If the virulence of the measles organism and other factors be assumed to be the same at A and K, it will follow, inasmuch as each case is then capable of infecting one other case, that the number of susceptible persons in the population at those points of time will be identical.

If the ordinate BT be = 2200 then at B the number of susceptible persons is at its minimum, for during the period M to T (A to B) those attacked each week outnumber the susceptibles newly added. At the corresponding point C the number of susceptibles is at a maximum, for the susceptibles newly added between K and C exceed in each week the number attacked.

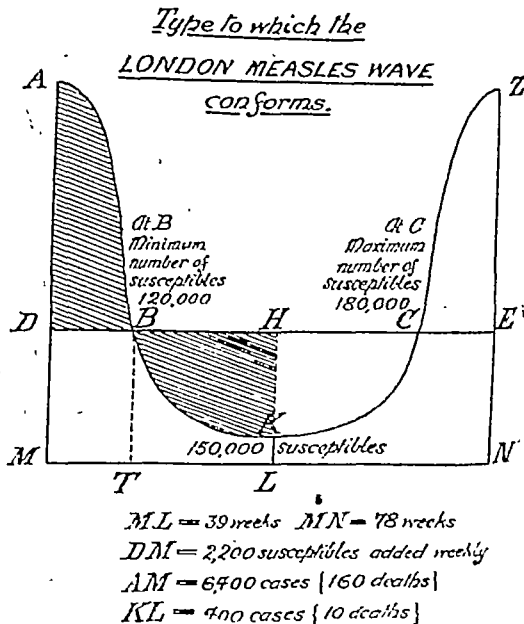
Further, area ADB = area BHK; for the former represents the excess of persons attacked over susceptibles newly added in the time MT; and this must be equal to the excess of those newly added over those attacked in the time TL.

The areas ADB, BHK may be approximately determined. Area ADB is rather greater than $\frac{ADB \cdot DB}{2}$, i.e., $\frac{(6400 - 2200) \times 14}{2}$ and is thus = 30,000 approximately. Thus, during the period B to C the number of susceptibles in the population must be augmented by some 60,000.

We may further determine the actual numbers of susceptibles at A, B, K, and C. In the neighbourhood of B the cases fall in a fortnight from about 2500 to 2000. Assume the number of susceptibles at A to be x , the number at B will be $x - 30,000$. If the lessened ability to infect at B be solely due to diminution in number of susceptibles we may write $\frac{x - 30,000}{x} = \frac{2000}{2500}$, i.e., $x = 150,000$ approximately. On this showing the measles wave in London shows fluctuation from a maximum number

of 150,000 susceptibles (at A) to a minimum of 120,000 susceptible (at B, reached 14 weeks after A). At this point B, instead of each infecting another case, five cases approximately produce only four; number must then further decline to about 400 a week (at C), when the susceptibles again attain to 150,000; proceeding onward O, the apparent infective power of each case continues to increase reaching O four cases approximately (reduce five) and the number susceptibles is at its maximum (180,000), but on proceeding further falls until it is again 150,000 at the crest of the wave. At C condition $\frac{x + 30,000}{x} = \frac{2500}{2000}$ if applied, would give a somewhat low value of x than that already obtained. In other words, the curve cannot be exactly symmetrical in relation to ordinates drawn through HKL, and if we wish to be precise it should be "skewed" according. It is indeed remarkable, having in view the hypothetical character of the conditions laid down and the extent to which distort

FIG. 7.



factors (climate, school influence, differing densities of population, &c.) might be expected to operate, that the type is so consistently adhered to. This examination shows the absurdity of assuming that an epidemic comes to an end because all the susceptibles have been attacked; or, again, of expecting to find explanation of the decline in loss of virulence of the organism or of its infecting power. Dr. A. Davidson points out that "retardation in the rate of spread is not to be accounted for solely by the reduction in the actual number of the susceptible, for the number attacked subsequent to the slowing of the rate of increase is greater than that up to the point where the retardation begins"; but, he adds, the "diminished density of the susceptible has to be taken into account," it "must have an effect in slowing the rate at which attacks proceed." The measles curve just defined sufficiently indicates that an epidemic may come to an end despite the existence of large numbers of susceptible persons in the population, merely on a "mechanical theory of numbers and density," and that the assumption of loss of virulence or infecting power on the part of the organism is quite unnecessary.

In the light of the facts elicited concerning measles some peculiarities in the behaviour of influenza become explicable; we can understand how, for example, in London the spark is kept alight which later sets aflame a "trailing epidemic." Assume each case of influenza at the commencement of an epidemic capable of infecting, say, two fresh cases, and take the incubation period as one-third of a week, then in the first week one, two, and four cases; in the second week eight, 16, and 32 will be attacked, and so on. As, however, large numbers of those specially exposed (city men, theatre goers, &c.) are stricken down the rate of increase will necessarily slacken.

Suppose in the maximum week that the numbers attacked, approximately stated, are 240,000, 300,000, and 240,000. We may then interpolate for the weeks between the second and the maximum roughly as follows:—

Third week,	64,	128,	256	In seven weeks upwards of 1,000,000 persons, or, say, 1 in 5 of the population, will have been attacked.
Fourth "	500,	950,	1,800	
Fifth "	3,200,	6,000,	11,000	
Sixth "	18,000,	30,000,	50,000	
Seventh "	80,000,	120,000,	180,000	
Maximum,	240,000,	300,000,	240,000	

Now the outbreak will take much longer to decline to extinction than it took to rise, for these specially exposed have in large part been already attacked and the disease must spread, in the main, among persons whose manner of life brings them comparatively little into contact with their fellows. The multiplier applied to each case has decreased from two to one in seven weeks, but it may take many months to diminish further

⁵ History of second attack by measles needs to be accepted with reserve. German measles and scarlet fever, at any rate, are often sources of confusion. The age incidence of measles in large communities and the fact of exemption in communities attacked after an interval of years of those who suffered in a previous outbreak make it clear that the protection is of a lasting character. Brownlee found out of 12,000 cases of measles at Belvidere (Glasgow), 1885-1902, 71 were over the age of thirty; "these 71 were almost without exception persons born in the country who had not passed through measles in early youth." Donald Hood has maintained ("An Enquiry into the Etiology of Röteln") that röteln is but a modified form of measles after all.

central figures of the second, third, &c., weeks are 2, 16, 123, 9.0, 6'00, 30,000, 121,600; each succeeding figure being derived from its predecessor by applying the multipliers 8, 8, 7.5, 6.25, 5.4, 3. We may continue this series of multipliers, stating them quite approximately as follows: 2.5, 0.5, 0.4, 0.36, 0.33, 0.30, 0.25, 0.27, 0.26, 0.25. The decrease, of course, becomes less and less rapid as time goes on. On this basis each crop of cases will still number over 100 up to the sixteenth week, and there will be an appreciable number of cases in each crop for some weeks later.

A further consideration must be borne in mind. New arrivals susceptible to influenza are continually entering London; there is, moreover, loss of susceptibility on the part of some of those who have already been attacked. The rate of decrease of the multiplier will clearly slacken and slacken and at length, after several months, may begin again to increase. We see therefore that, in London, influenza may well maintain itself for years, as, indeed, it has done in our own time.

It is important to observe that the capacity for smouldering depends upon the existence of a large population densely aggregated. It may be roughly stated that in London, with its 5,000,000 people, some million cases occur up to the time of maximum prevalence; there are after 13 weeks some 5000 cases a week; and a few cases still occur weekly even after six months. On this basis we see that in a population of, say 5000 persons, the outbreak would have practically terminated after 13 weeks, and be altogether extinct before the end of half a year. In these considerations we may find explanation of the behaviour of influenza in Martinique, Réunion, or the Fiji Islands.

The persistence of form of the London measles wave is not a little remarkable. Growth of population and alterations of its age constitution, varying customs, and social conditions have all left it almost undisturbed. Growth of population might, at first sight, have been expected to exert considerable influence. In island communities measles is introduced, prevails, dies out, and it may be many years before it again gains a hold; in Sweden and in country districts of England the disease presents "multianual fluctuations"; in large towns it has assumed a biennial type. In London and New York we might expect greater frequency of recurrence still.

Then, again, fluctuations in the birth rate might have been expected to have had more influence. Dr. B. A. Whitelegge has pointed out that there was "a distinct rise and fall in London measles mortality with maxima in the early forties, in the sixties, and in the eighties, over and above the biennial rhythm," and he looked for evidence of altered quality of virus in this connexion. In Sweden and Norway a rise in case mortality accompanied each epidemic; there are no case mortality figures for London but Dr. Whitelegge turned to the more detailed records of certain provincial towns. The most striking of the instances he gives, that of Sunderland in 1885, is, it should be observed, an example of noteworthy change in the birth-rate.⁶ A like variation, though a less marked one, occurred in Barnsley just prior to 1891. In a third instance (Hanley, 1888-89) it appears that school influence was operative.

Records of case mortality in measles, when available, are apt to relate to special classes of population and hence the influences exerted by age, social circumstances, &c., incessantly intrude. In the Norse epidemics, as Dr. Whitelegge has observed, the records relate to a few large towns and a number of country districts; it may be that varying degrees of prevalence in town and country, with accompanying age differences, account in some part for the alterations of case mortality observed.⁷

In differences, in social circumstances, overcrowding, poverty, lack of proper tendence, &c., there is abundant scope for variations in case mortality. Dr. Whitelegge says: "The case mortality is greatly influenced by surroundings, the severity and fatality being greatest among the poor. The experience of epidemics amongst soldiers in time of war seems to confirm this." He adds a reference to the outbreak in Fiji, in 1874, where "the case mortality was enormous," but says "not only neglect and exposure of the sick but exceptional susceptibility of a population never before invaded by measles had to be taken into account. Whether," he adds, "the destructiveness of the pestilence was to be attributed entirely to this lowered resistance, or whether there was an increased intensity of the

contagium—in other words, a true change of type—remains to be proved."

This outbreak, in which it is stated that some 40,000 natives succumbed to attack by measles, is one of the best-attested instances of its kind.⁸ Mr. B. G. Corney wrote concerning it: "In considering the reasons why some epidemics of measles should have had a malignant type great stress should, in my opinion, be laid on mistakes in dieting and therapeutic treatment." Again, he says: "Of the native population those classes over whom adequate supervision could be exercised have suffered but slightly."

Davis, writing of an epidemic in Samoa, computes that some 1000 deaths occurred in a population of about 31,500, half of these being in adults. He considers that nine-tenths of the deaths could have been prevented had care been taken. It appears that the Tongans in this outbreak, "with the experience of Fiji," took some precautions, and thus the 15-30 per cent. case mortality of Fiji was reduced to 4 or 5 per cent, and could have been further reduced. What becomes, then, of the special susceptibility of Polynesians?

This question of the attack of virgin communities needs clearing up. If there were such vulnerability, as is alleged, the evidence would be more conclusive. For the most part it relates to remote regions and long past times, and unfavourable conditions—war, famine, neglect, &c.—have always played a prominent part. Hirsch, who strongly holds that "there are, generally speaking, no real differences to be made out in the course which measles runs at the various points of its large area of distribution," lays stress on the influence exerted by "mistakes in dieting and therapeutic treatment." He cites certain cases which, however, it is difficult to accept unreservedly: the 20 per cent. case mortality of 1866 among Confederate troops; the 40 per cent. case mortality in Paris (1870) in the Garde Mobile; that among French troops after the Italian war; and that in the Brazilio-Paraguayan war, when nearly one-fifth of the national army perished, "not from the severity of the disease," for 50 cases treated in private practice recovered, but from "want of shelter and proper food."

In the excitement of campaigning in bygone days diagnosis may not have been precise; certainly the attack of large numbers of adults in a civilised country (30,000 Confederate troops) by measles excites suspicion.⁹ However this may be, we have evidence near at hand of the malignity of measles under unhygienic conditions and it would be easy to cite, not from the eighteenth century and from the Amazon, but from insanitary areas close at hand, case mortalities of 15 per cent. Without going so far, then, as to deny alteration of quality in measles altogether, it may be noted as very remarkable, having in view the many circumstances which might be expected to bring about apparent change, that the constancy of type should be so marked. From the measles of 1670 (which, however, it must be admitted was selected for description by Sydenham as "the most perfect disease of this genus") down to the measles of to-day, in whatever part of the world observed, there is a wonderful fixity of character.

On passing now from measles to small-pox we have to note qualifications. While second attacks of small-pox are not so uncommon as was once supposed, account must now also be taken of the disturbing influence of vaccination. It is clear that in pre-vaccination times—as, for example, in Kilmarnock—the behaviour of small-pox, both in age-incidence and periodicity, closely approximated to that of measles at the present day. After vaccination was introduced the inflammable material added year by year included not merely susceptible newcomers, for it becomes necessary to take account also of reversion to susceptibility on the part of persons vaccinated in infancy; moreover, as small-pox prevalence declined the number of those protected by a previous attack of the disease diminished.

The conditions in large centres of population resulted, as is generally recognised, in the production of short period

⁶ In the years 1830-34 the births were 5665, 5549, 5913, 6101, and 5347. In London the range in the number of susceptibles has been found to be approximately from 121,000 to 181,000. In Sunderland, approximately one twenty-fifth the size of London, it would be from 4600 to 7200. An alteration in the number of yearly births from 5000 to 6300 would therefore obviously disturb the behaviour of measles very materially.

⁷ Taking 14 sparsely populated districts in England and Wales, I found (Transactions of the Epidemiological Society, 1897) "during a period of 40 years the deaths from measles, at ages 0-5, constituted only 78 per cent. of the total deaths, whereas in London such deaths constituted between 93 and 94 per cent. of the total deaths." These different mortality rates represent, of course, still greater differences in prevalence at the higher as contrasted with the lower ages.

⁸ In an outbreak on the Amazon in 1749 whole tribes are said to have been cut off; similar accounts are forthcoming from Hudson's Bay Territory, 1846; Astoria, 1829; the Cape (among Hottentots), 1852; and Tasmania, 1854 and 1851. (Hirsch.) The Fiji Islands were attacked again in 1903; but the total mortality from "all causes" in that year is said to have been only 2381.

⁹ Transactions of the Epidemiological Society, vol. III.

¹⁰ Typhus fever, septicaemia, &c., may have been in question. Bruce Low (Transactions of the Epidemiological Society, vol. xVIII, p. 59) says: "Epidemic cerebro-spinal meningitis was widely spread during the Civil War, attacking the troops, especially the army of the Potomac and in camp near Washington. It was severely felt among the negroes sent by the Confederates to Memphis."

waves, such as those of London in the "fifties" and "sixties,"¹¹ but these conditions cannot but have had influence in setting up long period waves also and the epidemics of 1837 and of 1871 may conceivably have thus resulted.

Dr. Whitelegge did not find conclusive evidence to show that "the minor epidemics which occurred in London at intervals of four or five years were attended with any temporary increase of severity." In 1871, however, he finds distinct suggestion of greater virulence and of increased power of epidemic diffusion, and he adds: "For several years previously there had been indications of increasing intensity in London—i.e., a tendency to slightly greater destructiveness in each successive minor epidemic." Before accepting altered quality of virus as explanatory of the phenomena there is need for recognising the difficulty of comparing the extent to which the several populations were protected. Further, conditions as regards treatment and isolation of cases have undergone material alteration and it may be noted that practically nothing is known of the possibilities which Mr. W. H. Power's hypothesis of aerial convection opens up; it may be that the case mortality of air-borne small-pox differs from that of other small-pox, and in any event differing modes of spread of the disease give opportunity for small-pox carried in one or another way to affect various classes of the population. Furthermore, in 1870-71 a great European war was in progress and this country was again and again infected from France; it was to new arrivals from Paris on the outbreak of hostilities that the first exacerbation of small-pox in London was clearly traced and the disturbed conditions in Western Europe in the year ensuing no doubt had influence upon small-pox mortality.

A striking contrast is presented in London by the 1901-02 small-pox with case mortalities of 34.6 and 10.3 per cent. and the 1903 small-pox with case mortalities of 5 and 0.29 per cent. in unvaccinated and vaccinated respectively. But the fact needs to be borne in mind that 8000 small-pox attacks and at least 1,000,000 vaccinations and revaccinations had served to augment resistance of the London population between the two outbreaks. It has been suggested that the 1901-02 small-pox came from France and that it was more virulent than that of 1903 which came from America. Evidence as to this is not very precise; the earlier small-pox was undoubtedly, moreover, in numerous instances so mild as to be confused with chicken-pox.

This question of resistance needs to be kept prominently in mind. Cambridge, hard hit in 1870-71 and then subsequently well vaccinated, for many years escaped quite lightly in the recent outbreak. McVail observes that second small-pox "is as a rule so much modified that it has given room for dispute as to what is and what is not small-pox." Stone-pox, water-pox, wind-pox, sheep-pox, swine-pox, horn-pox, and milk-pox were discussed by eighteenth-century writers. McVail concludes that "it may safely be asserted that these names nearly always mean modified small-pox, and that in the great majority of cases the modifying agency was a previous attack of the disease, either by infection or inoculation." He adds, however, that "a curious feature in connection with modified forms of small-pox is that they sometimes became so established in a locality and so fixed in type that they prevailed in epidemics." Scant justice has been done to environment in these matters; the range of case mortality (according to Abbott's table, 0.5 to 12.5 in the vaccinated and 16.1 to 60 in the unvaccinated) is commonly attributed to altered virus, while the age of those attacked, interval between epidemics, and numerous other obviously important considerations are apt to be lost sight of. In some of the very low case mortalities (e.g., that of 0.2 recorded by Vogt from Edinburgh) chicken-pox may, as Simon pointed out, have been in question. Again, the fact that case mortality in small-pox is particularly low in children over two years of age (and this has always been so, as the Anthon figures indicate) explains a good deal of supposed alteration of virulence. Possibly cases are now included which would have been left out of count in days gone by; some of those notified in the London outbreak of 1901-02 presented only some half-dozen or dozen pustules; these were met with in persons protected by previous vaccination, may not similar cases have occurred in persons protected by previous small-pox in the eighteenth century? Again, so much turns upon the date and quality of vaccination, and it is important also that inquiry should be made as to previous attack by small-pox. This last-named question is probably important in connexion with the reported mild small-pox of South Africa (Kafir "amaas"), India (Punjab), West Indies, Trinidad, &c. From a report my colleague R. W. McC. Wanklyn has shown me I gather that the Trinidad small-pox occurred, for the most part, in persons who had either been vaccinated or had previously suffered from small-pox. The broad fact remains that only when the field of view is contracted are anomalous forms of the disease encountered; on a comprehensive survey and when due regard is given to environment and to degree of protection, artificial or natural, small-pox remains remarkably constant in type.

¹¹ There can be no doubt that the continual influx into London of troops from the country furnished the main supply of fuel for the flame. Dr. W. Black, writing in 1781, said: "Whatever share of small-pox mortality takes place in London amongst persons turned 20 years of age is almost solely confined to the new annual settlers and recruits who are necessary to repair the waste of London and the majority of whom arrive in the early years of the nineteenth century. The London children, as the early years of the nineteenth century passed, were to an increasing extent protected by vaccination, but the supplies of new material from the country accumulated year by year until at intervals of four or five years explosions became inevitable."

On turning to variations in quality exhibited in scarlet fever and diphtheria a preliminary difficulty is the apparent intermingling of the two diseases. There are instances of simultaneous appearance of the two clinical types in the same epidemic and even in members of the same family. Both diseases are milk-borne and the intermingling referred to is especially met with in milk outbreaks. There is the 'parallelism in behaviour as regards "school influence" and "return case" phenomena, and again there is the relation of both diseases to meteorological conditions and especially to years of drought. The interlacing of the features regarded as typical, of scarlet fever on the one hand and diphtheria on the other, in eighteenth and early nineteenth century literature, finds its counterpart in the confusion of nomenclature which has existed within the period of registration of deaths. Finally, suspicion has been entertained as to bacteriological relationships.

Whether we elect to continue to speak of two closely related diseases, scarlet fever and diphtheria, or of one throat malady, the records yield, as has been seen, clear evidence of long, approximately 30 year, oscillations with minor waves of three or four years' period. Are these the result of change in the organism or in the host and the environment generally?

Dr. Whitelegge cites case-mortality figures as proof of severity of type at times of increased prevalence. The figures are, however, open to interpretation in other ways. The London Fever Hospital statistics show, for example, that at ages 0-5 the case mortality varied not in direct but in inverse correspondence with variations of prevalence, and it is well known that remarkable changes of age distribution of patients admitted to that hospital have occurred at epidemic times.

While urging caution in this matter there can be no question as to the altering character of the disease in the 30-year periods, and if this be admitted it may be argued that it is idle to deny the like possibility in the short-period waves. The point at issue is, Do the changes connote alteration of the virus or merely in the effect produced in the soil? The two diseases faithfully fulfil their periodic times when a particular population is being kept under observation; now they are in "non-virulent" phase; in 15 or 20 years' time they may be again in "virulent phase." But the organism may be in one phase in one population and contemporaneously in the other phase in a neighbouring population, for it is an every-day observation that an epidemic losing intensity in one place may in spreading elsewhere show unabated energy. Surely, then, the supposed changes in virulence are really changes in reaction between a parasite and more or less immune hosts; the phenomena of immunity of individuals and of populations after attack clearly suggest this.

A word of explanation is perhaps here necessary. Altered reaction between host and parasite means alteration in the host. Why not also in the parasite? The virulence of an organism is enhanced and attenuated under laboratory conditions by passage through susceptible and insusceptible animals; can it be supposed, therefore, that the sore-throat organism of a community tested in the trough of a wave of multi-annual prevalence would prove identical with one taken at the crest of the wave? The organism doubtless undergoes change, but it must be insignificant in comparison with the epiphenomenal change in the reaction between parasite and host. The fact which stands out as specially remarkable is that this reaction comes back again and again to the point of departure, so that when a long period is passed in review there are cycles upon cycles, it may be, of epiphenomenal variation, but little or no evidence of evolutionary change in the disease organism itself.¹² For examples of this latter we must turn, not to seasonal fluctuations, short period waves and multi-annual fluctuations or nutations, but to

¹² It is comparatively easy to deal with species at first hand, but most difficult to deduce the fixity or variability of a species from observing effects produced by it. Thus Weismann examines instances which "prove that an immigrant species can spread over a new area without immediately varying" (e.g., the sparrow in the United States without immediately varying). But consider such a case as that and the evening primrose in Europe). The young trees were of the introduction of goats in St. Helena. The young trees were devoured as they grew, and with the extinction of the forests the indigenous insects and birds of the island were doomed to destruction. It would be absurd, however, to deduce from a changed St. Helena a change of type in the invading goat. Again, Weismann refers to the effect of the introduction of rabbits into Kerguelen land in 1874. The effect of the introduction of rabbits (Antiscorbutica), which flourished on the Kerguelen cabbage (Fringia antiscorbutica), which flourished on the island in 1848, was found, in 1888, to be growing only "upon perpendicular cliffs or upon the islands lying out in the flocks." The face of the island was transformed, but there is no evidence that the rabbit had undergone change of type.

secular mutations, and even then the evidence, as has been seen, is singularly unconvincing. Indeed, in the absence of such evidence we feel that it is not an explanation of change but of persistency of type that is needed. For this we may fall back either upon the phenomena of variation under domestication or under conditions of isolation, with reversion to ancestral characters as soon as free crossing with allied forms comes into play, or to take another and more promising analogy, we may instance the masterpieces of the florist, produced by grafting or layering, variety following upon variety, and may wonder whether the germs of disease which multiply asexually in the human body may not have sexual developmental phases by which the continuity of the species is preserved.¹²

I have considered now possible explanations of persistency of type and have suggested that in the unstable diseases apparent change of type may result from interplay between the organism and its environment.

Another set of considerations having important bearing upon the question of the origin of disease species remains to be alluded to. Must we assume that small-pox and chicken-pox, measles and German measles, have branched off from a common ancestral stock, just as the different species of hamamoba, spirochete, trypanosome, and bacterium have done? Again, where is the line between species and species to be drawn? In dealing with bacteria, for example, are differences in colour reaction, in power of fermenting various sugars, clotting milk, liquefying gelatin, and killing animals to be necessarily regarded as having specific value? This question assumes an acute form when agglutination tests come under consideration, for on application of these the bewildered observer in the field finds that of two cases exposed alike to infection one is taken by the bacteriologist and the other left.¹⁴

There is perhaps no family of disease organisms which presents more instructive phenomena for study of the criteria for the differentiation of species than the colon group. At the one extreme stands the bacillus coli (Escherich) and its relations, at the other the bacillus typhosus and its various "strains," and intermediate between them there are organisms such as those of dysentery, hog cholera, paratyphoid fever, and the many bacilli associated with meat poisoning.

It is held that certain peculiarities differentiate these closely allied organisms into distinct species and in default of other criteria reliance is placed upon the agglutination test. The serum from a particular meat poisoning outbreak clumps its special bacillus in higher dilutions than other meat-poisoning bacilli; a new designation, *paratyphoid*, is needed to describe a form of disease distinct from typhoid fever; it is also held that there are particular strains or races of typhoid bacilli. On culture media the same story is told; thus, to take one instance only—viz., the breaking-up of

certain sugars—the typical bacillus coli (Escherich) ferments lactose but not cane sugar. Given a bacillus which resembles it in all other particulars, but which does not ferment lactose or does so only feebly, or which ferments cane sugar or presents some suggestion that it is capable of doing so in a slight degree, is such an organism to be regarded as bacillus coli (Escherich) or as a distinct species? Again, there are said to be immune bodies in number untold, each specific to its particular toxin; the phenomena of bacteriolysis, hemolysis, and the rest all need for their explanation these specific "go-betweens"; indeed, according to some authorities the ferments or "complements" which the "go-betweens" annex are also specific. There have not been lacking dissentients who have found it hard to people the blood and tissues, even in imagination, with such myriads of specific bodies. As evidence of the need that has been felt for buttressing the thesis as to their specific nature it may be noted that the attempt has been made to put the matter to a sort of test by showing that (under laboratory conditions) no change from one species to another has occurred. Klein has recovered bacillus coli unchanged from tap water after many days or weeks; McConkey found it retained all its characters unchanged after an exposure of 358 days to what was a changing and unfavourable environment, a result distinctly opposed, as he puts it, to the idea that this bacillus ever becomes atypical. But we need to remember, as Sir William J. Collins has pointed out, that "the possibilities of environment are not exhausted by the confectionery of the laboratory." We need, too, to keep in mind the caution, given in Sheridan's *Critic*, that inability to see the Spanish fleet may be fully explained by the fact that "it is not yet in sight." A recent observation made by Dr. M. H. Gordon is very interesting in this connexion. He worked out "nine reaction tests" for the differentiation of streptococci and then endeavoured to ascertain how far the organisms, behaving in a particular manner, continued to do so after being passed through mice. Nine of 11 streptococci remained unaltered but in two instances an alteration had taken place. "One streptococcus had gained positive reaction for salicin, the other had lost its positive reaction for neutral red."

The question as to the specific character of allied forms of bacilli, immune bodies, &c., will no doubt receive a good deal of further attention in the near future. Certain considerations which may, perhaps, have a bearing on some aspects of the problem under consideration may be here referred to.

In the case of allied forms of bacilli, distinguished one from another by their varying behaviour as "polysaccharide fractors," it becomes necessary to regard each bacillus as having attached to it "enzymes" capable of fermenting the several sugars in question. Reasoning from the analogy of small-pox and vaccinia (which have been quite abruptly converted the one into the other), is it not conceivable that as a result of development under certain conditions (and these not necessarily laboratory conditions) a bacillus may lose an enzyme of one sort or become associated with one of another sort, thus being converted into a changed organism from a sugar-fermenting point of view? On such view of the matter it might be difficult or impossible to imitate in the laboratory the conditions necessary for displacement of the enzyme and a negative experiment such as that with tap-water and bacillus coli may after all be of minimal value.¹⁵

The conception of the bacillus as a kind of host with attached "enzymes" affords, it may now further be noted, a possible clue to the difficulties arising in connexion with immune bodies, agglutinins and the like. Take first the simple case—an organism with a single attached "enzyme." Introduction into a favourable medium is followed by rapid multiplication, which is by-and-by checked as products of fermentation accumulate and finally ceases; we may regard

¹² This brings us to some such conception as was put forward in Mr. W. H. Power's cholera hypothesis of 1883, a hypothesis which at once serves to explain certain phenomena to which he refers and also to reconcile extreme variations of virulence of the cholera organism, in particular areas and at particular times, with stability of cholera as an endemic and epidemic disease. It is a curious fact that the two water-borne diseases *par excellence*, enteric fever and cholera, have been found to be communicated by shell-fish and fish. The limitation of cholera in recent European experience to river populations and the extraordinary way in which, in 1832, it attacked fishing populations in this country and in Scotland (see Creighton, "History of Epidemics") may be considered in relation with the fact that in its endemic area it affects a population living in boats and feeding to a large extent upon what can be caught in the rivers.

¹⁴ There are signs of rebellion in the bacteriological camp itself. Thus, Lieutenant F. E. Mackie (THE LANCET, Sept. 23rd, 1906, p. 874) quotes authority for the statement that maximum agglutination value may be given by typhoid serum "with bacilli which were shown to have no etiological relation to the disease, and further that the specific agglutination value is invariably above that of the group agglutination, which indeed cuts at the root of the rationale of the differentiation of paratyphoid and enteric fever." Lieutenant Mackie boldly adopts the view that auto-intoxication by bacillus coli communis under certain unknown conditions of lowered bodily resistance, culminating in what amounts to transmutation of a saprophyte into a parasite, "explains the whole question." He even speculates on the "resemblance between enteric fever, paratyphoid fever, and dysentery, and the affinities between the Eberth-Gaffky bacillus, the coli communis bacillus, and Shiga's bacillus of dysentery." "It might be shown," he says, "that there is a suggestive gradation between the types, not only in their clinical manifestations, the site and type of the intestinal ulceration, and the degree of septilicity of the fever, and so on, but more markedly in the biological gradation from the bacillus at one end of the arc to that at the other end." See also Hygiene, January 1906, especially p. 52 as to "irregularity of agglutination results," and the observations of F. W. Andrews in a recent report on sewer air as to the alleged specific value of chemical tests.

¹⁵ This may perhaps be made more clear by replacing in thought the bacillus by a man and its "enzyme" by a tapeworm. Suppose, then, that question arose as to whether a man harbouring tenia mediocanellata and another man harbouring tenia solium, belonged to the same species. It would scarcely elucidate the matter were some inquirer to cause the first man to drink tap-water for 358 days and then demonstrate that his parasite exhibited the characters of tenia mediocanellata and not those of tenia solium. The result would not dispose of the question as to whether the first man could be infected with tenia solium or the second with tenia mediocanellata. Neither does the tap-water experiment dispose of the possibility that one "enzyme" may replace another in the bacterium.

the enzyme if we choose as in a condition of equilibrium, influenced equally but in opposed directions by two "mass actions"—that exerted by the fermentable substance and that exerted by the fermentation products.¹⁶ Similarly in the analogous highly complex immunization process a point of equilibrium is, it may be, reached when nutrient materials and excretory products (toxins, &c.) exert equal but opposite "mass actions."

We may, indeed, here find explanation of the aggregation of bacilli in "clumps," for it may be suggested that when the "enzymes" cease to act on the external medium they operate on the germs themselves. A phrase which we may perhaps style a "resting form" of the organism may be thus produced and this "resting form" may constitute a centre of attraction for bacilli. Just as when silk is rubbed upon glass the one is charged with positive, the other with negative, electricity, so the development of "resting forms" may engender chargings of opposite sign on these forms and on the bacilli, and there may thus result groupings of bacilli about the centres of attraction constituted by the presumably ultra-microscopic resting forms.

Thus far for agglutination in the simple case; but now, suppose the bacillus to act as host for multiple "enzymes," each of which may operate upon the blood and tissues of the host. Many fermentations now occur and the "mass-action-equilibrium points" will be reached, some earlier, some later, the blood and tissues "fermenting clear" for enzyme after enzyme, until the last has completed its work. Do the "resting forms" only begin to appear under such conditions when equilibrium is finally attained, or do they gradually accumulate from the moment when the first enzyme has become quiescent? There is here the semblance of a clue for threading the mazes of agglutination phenomena.

Why should not two "meat-poisoning bacilli," for example, while closely approximating to each other in almost all respects, present slight differences as regards their attached enzymes? These differences might find expression upon inoculation of bacillus A and bacillus B respectively in the development of differing agglutinating properties of sera of the immunised animals. A serum which has reached "mass-action-equilibrium point" for bacillus A has presumably not yet attained to that point for bacillus B, and therefore serum A will not clump bacillus B in the high dilutions which it clumps bacillus A; but serum A may, in so far as the properties which are all important are concerned, approximate closely enough to serum B to clump bacillus B in moderate dilutions and may have clumping capacity for bacillus B distinctly greater than it has for, say, bacillus typhosus. In some such tentative hypothesis as this may be found explanation of the "specific" relationship between serum and bacillus.

Whether this method of looking at specific agglutination phenomena be regarded as possessing interest or not there remains the possibility that in connexion with the attainment to "mass-action-equilibrium point" an unrecognised phase of parasitic existence may be evolved. In this unknown phase the organism may or may not fix stains, pass through filters, withstand a temperature of 70° C.—there is no reason for assuming it will comport itself as does the familiar bacillus in the respects named.¹⁷

¹⁶ That there is justification for such a view of the matter will be seen on reference to certain phenomena in fermentation and agglutination processes. Yeast fermentation proceeds until there comes a time when "the resulting alcohol is injurious to further action" (Newman) on the part of the yeast. Charrin and Roger in 1889 found that "when the bacillus proteanus was grown in the serum of an animal immunised against this organism the growth formed a deposit at the foot of the vessel, whereas a growth in normal serum produced a uniform turbidity." Again Grüber and Durham in investigating Pfeiffer's reaction "found that when a small quantity of the serum of an animal highly immunised against a particular motile organism (cholera vibrio, typhoid bacillus, &c.) is added to an emulsion of the organisms the latter lose their motility and become agglutinated into clumps" (Muir and Ritchie's Manual of Bacteriology).

¹⁷ The hypothesis that some such unknown phase exists may serve to explain certain phenomena which have been observed, such, for example, as the infectivity of milk in which the tubercle bacillus cannot be demonstrated by microscopical examination, or again the results obtained by Houston with regard to the virulence on inoculation in guinea-pigs "of broth cultures incubated with minute amounts of human faces, while broth cultures of bacillus coli isolated from parallel amounts of the same material, were commonly either non-pathogenic or at all events not virulent." A possible misconception with regard to the suggestions made above may be guarded against. The hypothesis put forward is not to the effect that the bacilli are necessarily all made to yield the unknown phase at one point of time, the moment of attainment of "mass-action-equilibrium."

This digression has been necessary in order to "clear the air" with regard to the question of specificity. If orthodox doctrine be accepted the name of distinct species in the colon group is legion and the stability of each, so far as the individual bacteriologist is concerned, practically unassailable. On the other hand, if it be assumed that a particular colon bacillus may live and develop "symbiotically," so to speak, with one or more enzymes, which under certain conditions may be replaced by others, we then clearly have to hand, in the permutations and combinations of a limited number of enzymes, scope for comprehending in conception a very large number of nearly related organisms. If it should be possible thus to reduce, for example, the whole meat-poisoning tribe to two or three bacilli, in varied association with some half-dozen enzymes, the simplification introduced would be great and it would at least be no longer necessary to crowd the blood and tissues with standing armies of specific bodies.

It may perhaps be said that whether we postulate on the one hand 1000 species of bacillus coli and its allies or on the other quite a limited number of species having in varied combination some five or six associated "enzymes" the difference is fundamentally one of terminology only. Yet this is not so. From the latter point of view our conceptions with regard to certain phenomena in the life-history of the organism are greatly simplified, while at the same time the bacillus, considered from an evolutionary standpoint, is endowed with a stability far transcending that which it possesses on the former hypothesis. The assumption that fermenting property can suddenly be gained runs counter, it is true, to current opinion. The bacteriologist has to admit that such powers may be lost—this is an everyday laboratory experience—but he is reluctant to agree that they may be newly acquired. A doctrine which carries with it some limitation upon the present-day demands of the founders of new bacteriological species at least possesses this in its favour, that it furnishes a simple explanation of the behaviour of epidemics as ascertained from records of disease.

The bacteriologist who claims that the most minute differences are inseparably connected with and distinguish species of bacilli throughout long ages must reckon with the fact that the more numerous the species the greater must have been the ability to vary from an original stock—the whole question is, indeed, not one as to ability to vary, but as to the number of stable forms and the distances which separate positions of equilibrium one from another.

Much that has been said of varieties of bacillus coli holds good of streptococci. Furthermore, just as various strains of these organisms may be assumed to be converted, at a stroke, one into another by a change of "enzyme," so it may be that supposed specific forms stand in a like close relationship. The doctrine may find application, for example, in connexion with tubercle bacilli of bovine and human origin, or, going still further afield, some difference, in the parasites associated with a parasite, may be expected to yield explanation of the association between small-pox and vaccinia, scarlet fever and diphtheria, dengue and influenza, enteric fever and dysentery, or typhus and relapsing fever. We may even conjecture that immunity, in some instances, may mean that the parasite has been harnessed to some other parasite or enzyme which robs it of its former virulence. Here, of course, we must not lose sight of the fact that the particular organism the bacteriologist has drawn attention to may itself be a mere sub-parasite, capable of living symbiotically with the parasite in chief. Thus the influenza organism may at one time live in association with Pfeiffer's bacillus, at another with the micrococcus catarrhalis, and so on. Or the throat distemper organism may live in association now with the diphtheria bacillus and now with the streptococcus conglomeratus.

A particular organism may conceivably cause more than one disease in man by being introduced by different intermediary hosts; and again distinct diseases may result in man when the organism causing the disease is accompanied by different enzymes or subparasites temporarily associated with it. With regard to the former suggestion, it must be borne in mind, however, that only particular species of Anopheles can communicate malaria, nearly allied forms being unable to do so, and thus the organism, which only

The conception would rather be that the tendency to development of the unknown phase is at its maximum and that certain bacilli readily produce it then, though others (for example, young freshly split bacilli) may still be obtuse in this respect.

possesses ability to develop in one species of insect host, stands in marked contrast to the anthrax or the tubercle bacillus, which can affect animals of differing species; it may be that in species in which the sexual phase of development is thus restricted the mere asexual cycle can be completed in numerous hosts. The second suggestion may be further considered from various points of view. Thus there is the fact, if it be one, that protection may be renewed and maintained by repeated exposure. The nurse and medical man conceivably owe immunity to their ability to attach to invading organisms some enzyme which renders development in the human body a cause not of disease but of renewal of protection against disease. Again, the occurrence of mild cases of typhus fever or of dengue or influenza (during inter-epidemic periods) readily fits in with an hypothesis of association of the dominating organism of the disease with some attenuating sub-parasite. Just as chemical atoms combine to form molecules and molecules to form compounds, so may sub-parasites be combined with parasites and these again with higher parasites. Dean Swift, after pointing out that Hobbes has proved "every creature lives in a state of war by nature," goes on to relate how naturalists—

"Observe a flea
Has smaller fleas that on him prey; and
These have smaller still to bite 'em;
And so proceed ad infinitum."

In modern bacteriological theories of disease we may have concentrated attention too exclusively upon particular links in the chain of parasitism—in other words, we have studied the parasites which develop under laboratory conditions and have held disease to be bound up with them, forgetting that a particular parasite may be merely one of a series, and that it may in some cases be replaced in that series by another parasite, and then for the time being, and in the locality in question, cease to have any concern with disease at all. The records of epidemics suggest that some such explanation must be looked for to reconcile the extraordinary persistency of disease types with the no less remarkable variability of the organisms to which the bacteriologist attaches importance as causes of disease.

The Hunterian Lectures

OF

PHLEBITIS AND THROMBOSIS.

Delivered before the Royal College of Surgeons of England on
March 5th, 7th, and 9th, 1906.

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LECTURE III.

Delivered on March 9th.

MR. PRESIDENT AND GENTLEMEN,—Simple non-infective thrombosis of the cerebral sinuses is met with chiefly in over-worked chlorotic young women, in children who have suffered with long-continued diarrhoea, and in conditions of exhaustion such as ensue towards the end of fevers. It may also be the result of injury.¹ It commences most often in the longitudinal sinus and gives rise to much cerebral congestion with minute hemorrhagic extravasations into the brain substance and fluid distension of the ventricles. There may also be optic neuritis. The symptoms are severe headache, drowsiness, vomiting, convulsions, and paralysis. These may subside and end in complete recovery or they may go on to coma and death.² I have seen an

instance in a boy recovering from scarlet fever in whom besides convulsions and coma there was protrusion of the globe of the eye, chemosis, and almost complete interference with ocular movement, presumably due to thrombosis of the cavernous and petrosal sinuses. In spite of these serious symptoms the boy recovered.

In infective cerebral thrombosis there will be added to the symptoms described the rigors, sweating, and irregular temperature significant of pyæmia. Dr. G. Newton Pitt in the Gulstonian lectures delivered before the Royal College of Physicians in 1890³ gives a most valuable analysis of 44 cases of sinus thrombosis.

	Primary.	Secondary.		Total.
		Ear disease.	Other causes.	
Longitudinal sinus	5	4	3	12
Lateral sinus	5	22	9	36
Cerebral veins	5	1	1	7
Cavernous sinus	—	1	3	4
Circular "	—	1	1	2
Inferior petrosal "	—	1	1	2
Superior "	—	2	—	2

Primary thrombosis occurs, Dr. Pitt points out, in cases "with a feeble cerebral circulation, associated with exhausting diseases." "In this form, owing to the stagnation of the circulation, clotting tends to take place in the sinuses; the clot becomes adherent but seldom infects the blood or gives rise to emboli."

Secondary thrombosis occurs in connexion with adjacent diseases, chiefly of the ear. Of 26 cases 22 were due to ear disease and in 11 of these the clotting spread to the jugular vein. In the majority of the cases the symptoms were mainly those of pyæmia, three-quarters of them dying from pulmonary infection. "Of the remaining cases seven were traumatic, three had spread from malignant pustules or carbuncles on the face, two from an adjacent pachymeningitis, one from compression by a growth, and only one from a distant source—namely, from pyæmia set up by a carbuncle on the back." Dr. A. Brayton Ball⁴ has published an interesting contribution to this subject in which he makes a similar division of cases of intracranial venous thrombosis into two classes presenting marked differences in their etiology and symptomatology. He attributes secondary thrombosis either to the propagation of a phlebitis or to the direct prolongation of a thrombus having origin in otitis media, in disease of the cranial bones, in septic wounds, and carbuncular or erysipelatous inflammation of the face and head. Primary thrombosis he connects chiefly with debilitating illness and enfeebled circulation and he draws especial attention to the cases occurring in anæmic and chlorotic girls without any preceding symptoms. Dr. Ball quotes a number of illustrative cases which exhibit the variety and mobility of the symptoms and he points out that "apart from the fact that these symptoms often show a mobility that is uncommon in most cerebral affections, there is nothing distinctive in their character. The diagnosis in this class of cases, when possible at all, must be made from the association of anomalous cerebral symptoms with the anæmic state, from evidence in external veins of backward pressure from the intracranial venous circulation, and from the occurrence of thrombosis in other parts of the body, particularly the internal jugular or the veins of the upper or lower limbs."

Thrombosis of the mesenteric veins is most often associated with intestinal ulceration. When it occurs in connexion with peripheral thrombosis the onset is usually sudden and the symptoms severe. Vomiting, rapid intestinal distension, griping pain, and intestinal paralysis are the chief symptoms, leading often to rapid death.

I have seen a case in which, during the course of a femoral phlebitis, there were symptoms indicative of

whom the symptoms were only those of exhaustion until a short time before death, when there was loss of the power of speech, the mind remaining unaffected. Transactions of the Pathological Society, vol. vi., p. 31.

⁴ THE LANCET, April 19th, 1890, p. 843.

⁵ Transactions of the Association of American Physicians, vol. ix., p. 52. Thrombosis of Cerebral Sinuses and Veins, by Dr. A. Brayton Ball, with a bibliography of the subject.

¹ Lectures I. and II. were published in THE LANCET of March 10th, 1906, p. 645.

² Mr. Arbuthnot Lane has recorded a case of thrombosis of the longitudinal sinus after fracture of the parietal bone, there being no discoloured injury of the sinus. Transactions of the Clinical Society, vol. xviii., p. 219.

³ Professor Humphry, in the Thesis alluded to, gives an admirable description of such a case, with the post-mortem examination. Op. cit., p. 32. Dr. J. W. Ogle recorded a case of thrombosis of the cerebral veins and sinuses in a woman who died exhausted by rectal disease, in

thrombosis of a gastric vein. The patient was suddenly attacked with vomiting, followed by great gastric and intestinal distension, dyspnoea, and severe pain in the upper part of the abdomen. The distension gradually diminished, but from the moment of the attack there were complete anorexia and an absolute cessation of salivary secretion. The digestive function was for a time in almost complete abeyance, only very small quantities of peptonised fluid food could be taken; and if the fluid entered the stomach when the patient was lying on the left side acute pain was felt which at once subsided if the patient was turned on to the right side. The suppression of salivary secretion and consequent dryness of the mouth led to the collection and decomposition of pharyngeal mucus which, in spite of the frequent use of antiseptic washes, caused great distress. After passing through a period of great exhaustion the patient ultimately recovered. Dr. H. D. Rolleston has recorded in the Transactions of the Pathological Society⁶ a case in which there was thrombosis of the superior and inferior mesenteric veins, of the left internal and external iliac veins, and of the splenic vein of a man who died after profuse diarrhoea and hæmatemesis and in whom there was ulceration of the vermiform appendix. Dr. Hilton Fagge⁷ described a case of acute thrombosis of the superior mesenteric and portal veins with rapidly fatal collapse. A woman, aged 34 years, had thrombosis of both femoral veins 16 days after confinement. On the thirty-sixth day she was attacked with violent pain in the abdomen and vomiting. Collapse rapidly succeeded, "the eyes were sunken, pulse almost imperceptible, pain coming on in paroxysms but never completely intermitting, severe retching, and frequent vomiting of a rather viscid blood-stained liquid in small quantity." She was perfectly conscious till death, 11 hours from the onset of the attack.

Thrombosis of the portal vein may arise by extension from a mesenteric vein or from gastric or intestinal disease; it may be due to pressure by tumours or by the interstitial growth of cirrhosis or syphilis; and it may depend upon disease, degeneration, or injury of the coats of the vein. The symptoms will depend upon the rate at which the thrombus is formed. When the thrombus is acute, ascites is rapidly developed (the fluid quickly re-accumulating after tapping), and there may be hæmatemesis, intestinal hæmorrhage, and other evidences of portal obstruction. If the patient survives a notable development and dilatation of the superficial veins of the abdominal wall become apparent. If the process is gradual there may be few or no characteristic symptoms. Professor W. Osler⁸ has described the case of a man, aged 62 years, who died two days after admission into hospital suffering from ascites and hæmatemesis. Post mortem the liver was found to be in a state of advanced cirrhosis and contained a large infarct. "The portal vein presented a soft brown thrombus, occupying the upper part of the trunk but not completely obliterating it; the branches passing to the right lobe had closely adhering light brown thrombi; that passing to the antero-lateral region, where the infarct was situated, was filled with a firm, solid, partially laminated clot, evidently formed some time before death." In this case Professor Osler points out that the rare condition of infarction of the liver probably depended upon the cirrhosis and consequent obliteration of many of the branches of the hepatic artery.

In contrast with this Professor Osler has related⁹ the case of a man, aged 28 years, in whom there had been for years complete obliteration of the portal vein. The collateral circulation was, however, so fully compensatory that there was no material interference with the functions of the organs. There were extensive communications between the gastric and œsophageal veins, and through the latter with the azygos and lower intercostal veins and those of the diaphragm, all of which were greatly enlarged.

Professor Welch¹⁰ has recorded a case in which there seemed good reason to attribute the formation of a portal thrombus to a blow on the abdomen. The case is one to be borne in mind in regard to abdominal injuries. "A lad who had received a severe blow in the abdomen was admitted into Belle Vue Hospital with extreme ascites which had come on within

two weeks after the injury. He was repeatedly tapped, clear fluid re-accumulating at first with great rapidity at each tapping, afterwards more slowly, until in the course of months there was complete recovery. In the meantime enlarged veins made their appearance over the upper part of the abdomen."

The enlarged veins constituting *venous hæmorrhoids* are very prone to become thrombosed, especially when intruded through the sphincter. The clot herein is due to the invasion of micro-organisms, and the extension of this septic clot frequently leads to suppuration and then to the formation of ischio-rectal abscess. I have several times traced the thrombosed vein from an inflamed hæmorrhoid into the ischio-rectal cellular tissue to the spot where suppuration has occurred, and I am sure that this is an uncommon mode of origin of ischio-rectal abscess.

Thrombosis of the renal veins may be primary and may or may be the consequence of extension from the vena cava; it may also depend upon disease of the kidney and upon pressure of neighbouring tumours. When of gradual occurrence the symptoms may be few and indistinguishable, as the collateral circulation may be sufficiently developed for complete recovery. When of sudden onset it is manifested by the appearance of blood or albumen in the urine, and may be rapidly fatal. Dr. W. M. Ord¹¹ recorded the case of a boy, aged one year, who was recovering from scarlet fever, and who was suddenly seized with abdominal pain and vomiting, rapidly succeeded by collapse and death in four hours. Post mortem the left kidney was swollen and of dark purple colour, and under the microscope showed great engorgement of its vessels with numerous small extravasations, but there were no signs of interstitial nephritis. There was thrombosis of the renal vein extending into, but not occluding, the vena cava. Dr. Theodore Fisher¹² has published the case of a girl, aged 13 years, who had been the subject of old hip disease and who was admitted into the Bristol Royal Infirmary on account of general œdema of three weeks' duration. There was no history of scarlet fever. The urine contained 3 per cent. of albumin, some blood, and granular casts. The quantity of urine passed varied between 15 and 46 ounces in the 24 hours during the first week. It then diminished rapidly to only 12 ounces the day before death, which occurred 11 days after admission. Post mortem the kidneys were enlarged and the cortex was swollen, pale yellow, and opaque. There was thrombosis of both renal veins and of the vena cava and also of the pulmonary arteries. The clot in the renal veins was becoming organised and that in the pulmonary artery was channelled. Beckman¹³ states that thrombosis of the renal veins is no uncommon occurrence in infants dying with profuse diarrhoea and atrophy. He has examined ten cases carefully. The left renal vein was the one most often affected; in a few cases the thrombus extended into and obstructed the inferior vena cava. The coagula were mostly dark red and loosely adherent to the walls of the vessels. No blood in the urine or other symptoms seem to have been observed during life.

Thrombosis of the splenic vein is usually due to extension from the vena cava; it may be associated with thrombosis of other abdominal veins, as in Dr. Rolleston's case already alluded to;¹⁴ or it may be the consequence of suppuration or cancerous disease of the pancreas, and it may be caused by degeneration of the walls of the splenic vein. As the process is seldom confined to the splenic vein there are no characteristic symptoms excepting, perhaps, a rapid swelling of the spleen.

Thrombosis of the prostatic veins would seem from post-mortem evidence to be not very rare and may perhaps be the result in some cases of a past prostatitis. It is probably also in some cases the first step in the causation of prostatic abscess.

Thrombosis in the corpus cavernosum of the penis is occasionally met with but is not very common. It is usually associated with the gouty constitution but I have seen a case in which no such connexion could be traced. Sir Prescott Hewett¹⁵ recorded two cases of thrombosis of the corpus cavernosum in men, aged 65 and 58 years respectively, both

⁶ Transactions of the Pathological Society, vol. xliii., p. 49.

⁷ Ibid., vol. xxxvii., p. 124.

⁸ Transactions of the Association of American Physicians, 1887, p. 137.

⁹ Journal of Anatomy and Physiology, London, 1882, p. 268.

¹⁰ Allbutt's System of Medicine, vol. vi., p. 220.

¹¹ Transactions of the Pathological Society of London, vol. xli., p. 22.

¹² Ibid., vol. xliii., p. 113.

¹³ Year Book of Medicine and Surgery, 1850, New Sydenham Society, p. 203.

¹⁴ Transactions of the Pathological Society of London, vol. xlii., p. 49.

¹⁵ Transactions of the Clinical Society of London, vol. vi., p. 42.

gouty. In one case there was a single, hard, painless nodule; in the second case there were four nodules, three on the left and one on the right side, "varying in size from a pea to that of a French bean, they were perfectly circumscribed, hard to the touch, knot-like, and painless when handled." The nodules all gradually diminished and in two years two of them had disappeared, no treatment having been adopted. Sir Dyce Duckworth¹⁶ has recorded a case of painful priapism due to thrombosis of the corpus cavernosum which occurred in a man, aged 42 years, during a distinct attack of acute gout. The condition persisted for three weeks and gradually disappeared. Sir Dyce Duckworth¹⁷ also quotes two similar cases, one in a very gouty man, aged 45 years, in which the condition lasted three weeks, and a second in a man, aged 60 years, also gouty and in whom a second attack occurred after a year's interval.

The treatment of a case of simple non-infective phlebitis or thrombosis consists chiefly in the enforcement of complete rest. The point to be kept in mind is the importance of taking every possible precaution against the detachment of clot. This is the chief danger, especially when the larger venous trunks are involved, and it belongs to the slight as well as to the severe cases. The patient must be at once, and rigidly, confined to bed and must avoid all exertion. Especially must he be warned against any straining effort, as, for instance, in defecation. The bowels therefore must be kept acting easily by gentle laxatives and, of course, the bed-pan must be used. The neglect of this precaution has led to many disastrous results. If there be troublesome cough laryngeal sedatives must be used and easy expectoration promoted so as to avoid the disturbance and effort which cough involves. In gouty phlebitis the amount of solid food should be diminished but distilled water should be taken freely (two or three pints in the 24 hours); this should be mixed with a carminative (as ginger) as care should be taken to avoid flatulence, for any distension of the abdominal viscera is a serious embarrassment to the circulation. An occasional dose of calomel is usually beneficial.

I have already alluded to Professor Wright's¹⁸ observation showing that the administration of citric acid is followed by a decalcification of the blood and a corresponding diminution of its coagulability. Dr. C. J. Nepean Longridge has kindly furnished me with some observations upon lying-in women to the same effect. He also found that by taking citric acid the coagulation time of his own blood was increased from 2 minutes 45 seconds to 3 minutes 35 seconds without any change of diet. I think, therefore, that citric acid should certainly be given for the treatment of thrombosis as well as for its prevention in conditions in which that danger is likely to occur. Having in mind also the difficulty of certainly excluding the possibility of an infective origin and of separating clinically the infective and non-infective cases I hold that it is wise to give quinine in moderate doses. It also seems to me that Professor Wright's¹⁹ suggestion as to decalcifying the milk by the addition of citrate of soda should be adopted whenever large quantities of milk are given to patients prone to thrombosis. The same author has also proved experimentally²⁰ that the coagulability of the blood is diminished by ingestion of alcohol, by drinking large quantities of fluid, and by reducing the supply of food. The diet should be light and easily digestible and may perhaps with advantage include some alcohol. Tobacco smoking would seem to be harmless or perhaps even beneficial.

Dr. B. W. Richardson²¹ made a great number of experiments on the blood of a gentleman who was addicted to constant smoking. He observed that in the morning after rising, and before smoking, the blood coagulated in two minutes with moderate firmness and the corpuscles were generally natural in shape. "When two or three pipes had been smoked a distinct change occurred in the blood; it retained its brightness, but flowed freely and coagulated slowly and feebly. After a long day of smoking—from 15

to 25 pipes having been taken—the blood, though still retaining its bright colour, flowed much more readily and would sometimes refuse to coagulate altogether. Left for a time in the cup of a microscope-glass, it would thicken from a sort of drying process, but would not healthily coagulate." Under the microscope the red corpuscles showed some irregularity of shape and did not form rouleaux. After a night's rest the blood resumed its normal condition. Dr. Richardson also observed that the blood of jaundiced persons coagulated slowly and feebly. He also found that the administration of ammonia caused similar changes in the corpuscles and a decrease in the coagulability of the blood.

It will be seen that the coagulability of the blood is increased by — The coagulation of the blood is diminished by —

Carbonic acid.	Oxygen
Lime salts (calcium chloride, calcium lactate.)	Alcohol.
Milk.	Restriction of food.
Magnesium carbonate.	Diminution of lime salts.
Restriction of fluid	Large quantities of fluid.
	Citric acid.
	Rhubarb.
	Acid fruit juices.
	Acid wines.
	Tobacco smoking.

The treatment must, however, of course be modified to meet the special conditions of those in whom the phlebitis is a complication of other serious diseases, as, for instance, in chlorosis, influenza, and enteric fever. I do not think that in any case depletion is desirable. The local measures should be directed to relieving pain

FIG. 5.



Femoral vein. Infective phlebitis. Showing great thickening of coats of vein and disintegrating clot

and insuring rest to the affected limb. For the relief of pain nothing is so effectual as the application of heat; and as it is most important to disturb the limb as little as possible it is best to use dry heat. Thin flannel bags filled with bran and heated in an oven are convenient for this purpose; they are light and retain heat for a considerable time. When only a small portion of vein is involved a hot lead and opium lotion or a fomentation of boric lint covered by jaconet is comfortable but the extensive use of wet applications is inconvenient and involves frequent disturbance. When pain is not severe the most comfortable dressing is a layer of Gamgee tissue secured round the limb by a many-tailed bandage, the skin having been first dusted over with powdered boric acid. If the inflamed vein is superficial and tender it is well to paint along the line of redness a thick lotion of oxide of zinc, glycerine, and carbolic acid in water. I have never seen the least advantage from the application of belladonna which, though often recommended, seems to me to be disagreeable and useless. When the veins of the upper limb are affected the arm should be extended upon a pillow raised slightly above the level of the body and away from the side. It is best secured

¹⁶ *Ibid.*, vol. xxy, p. 97.

¹⁷ *Ibid.*, p. 100.

¹⁸ *Brit. Med. Jour.*, July 14th, 1894, p. 57, and *THE LANCET*, Oct. 14th, 1905, p. 1096.

¹⁹ *Transactions of the Royal Medical and Chirurgical Society*, vol. lxxv, p. 1. See also *THE LANCET*, July 22nd, 1893, p. 194, Dr. A. T. Wright on the Advantages of Decalcified Milk in the Feeding of Infants and Invalids, and Dr. F. J. Poynton on the same in *THE LANCET*, August 13th, 1904, p. 433.

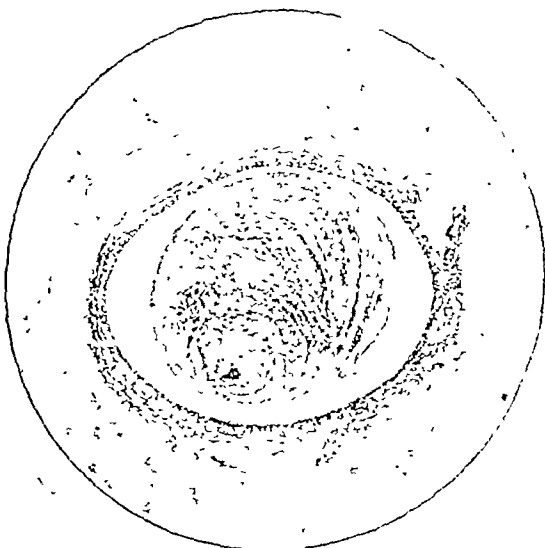
²⁰ *Transactions of the Pathological Society of London*, vol. 11, 1900, p. 232.

²¹ *The Cause of the Coagulation of the Blood*, by B. W. Richardson, M.D., 1853, p. 101.

by wrapping a second pillow partially round the limb and fixing it by two or three separate strips of wide bandage. In this way sudden movements in sleep or otherwise are prevented. A similar arrangement can be adapted to the leg or a well-padded splint may be applied and the limb slung from a cradle.

I wish now to consider some of the more remote effects of phlebitis, for it seems to me that too little attention has been paid to conditions upon the management of which will often depend much of the future comfort and activity of the patient. After a severe attack of phlebitis, especially if the large venous trunks have been involved, some of the affected veins will probably be left more or less obstructed. The lumen of the vein may be completely filled by blood clot which, becoming gradually organised, obliterates the canal and converts the vein into a solid cord, or the clot may be tunnelled and a channel for the blood remain either through the thrombus or between it and the wall of the vein. In non-infective phlebitis or thrombosis the outer coat of the vein is not materially thickened and the diminished lumen of the vessel depends upon the organisation and contraction of the adherent clot. (Fig. 6.) But in phlebitis originating

FIG. 6.



Thrombosis of femoral vein but no thickening of venous coats.

in an infecting focus or wound the outer coat is often much infiltrated and may be left permanently thickened and indurated. In this way and by subsequent contraction the lumen of the vessel is encroached upon and much diminished, and this may be still further narrowed by the addition of organised clot from within. (Fig. 5.)

When a main venous trunk, such as the femoral or iliac, is permanently blocked certain changes result in the limb concerned. I will take as an example a case in which the femoral and external iliac veins are obliterated. At first, whenever the limb is dependent or the upright posture is assumed the veins both superficial and deep become full, the limb becomes painful, tense, and somewhat swollen, and a sense of constriction is felt at the groin and in the popliteal space. The skin presents a dusky, congested appearance, the muscular power is diminished, and after walking a short distance severe aching pains occur which make a rest imperative. If the patient is now placed recumbent and the limb elevated the veins gradually become less full, the skin recovers its normal colour, and the pain subsides, but the limb remains somewhat larger and firmer than its healthy fellow, and the contraction of the superficial muscles is less easily seen. The collateral venous circulation begins to develop almost immediately upon the blocking of the main trunk and in the course of a month or six weeks some enlargement of the superficial veins at the groin and lower part of the abdominal wall becomes manifest (superficial epigastric, superficial circumflex iliac, external pudic, &c.); this goes on gradually increasing until the veins attain an enormous size and a number of tortuous veins half an inch or more in diameter extend over the groin and abdominal surface.

At the same time the deep communicating veins are enlarging, and as the collateral circulation becomes developed the upright posture causes less congestion and swelling, walking is less painful, and the limb recovers more quickly when rested. But the enlarged superficial veins, although assisting the return of the venous blood, are themselves the cause of much local discomfort; their distension gives rise to painful aching and their prominence and lack of support render them liable to injury. It is therefore desirable in all cases in which a main venous trunk is blocked to favour as far as possible the development of the deep collateral vessels and to prevent the excessive enlargement of the superficial veins. It will be remembered that the return of the blood through the deep veins is assisted by muscular contraction, which has but little effect upon the veins of the surface, and that the deep veins having the support and protection of the tissues among which they are placed do not become easily over-distended or varicose and are not liable to injury. Evidently, therefore, it is to be desired that the collateral circulation should depend as much as possible upon the deep veins and as little as possible upon those of the surface. This is, I think, a matter of considerable importance in the management of such cases and a good deal can be done in the direction indicated. In the first place, it is necessary to decide at what period the use of the limb may safely be attempted. This requires careful consideration, for while, on the one hand, there is the danger of displacement of clot if the limb is used too soon, on the other hand the functional activity of the muscles is the best aid towards the development of the deep collateral veins. Pulmonary embolism is not common after the sixth week from the formation of a thrombus, although instances have been recorded of the detachment of a clot by a blow or pressure at later periods. There are great variations in the time required for the organisation of thrombi. It must be borne in mind that this process is really the invasion of the thrombus by active cells and new vessels and the gradual replacement of the blood clot by connective tissue. This change needs for its favourable progress the functional activity of the venous wall and is inevitable delayed by the presence of septic organisms. In simple non-infective cases evidence of commencing organisation may be found in a thrombus at the end of a week, whereas in veins the walls of which have undergone degeneration very little change may have occurred at the end of a month.

In an uncomplicated case of phlebitis it will probably be safe at the end of six weeks from the last extension of the thrombus to commence some movement of the limb, but this should not be permitted so long as there is any tenderness over the vein, for tenderness implies the possibility of further extension of thrombus; moreover, the first movements should, of course, be made with great gentleness and caution. In cases of septic origin and also in cases in which there is disease or degeneration of the veins a longer time should be allowed before movement. The organisation of thrombus in varicose veins is usually very slow and when thrombosis occurs in cysts and tortuous dilatations, especially in veins near the knee or in the long saphenous in the thigh, the safest course is to ligature the vein and excise the thrombosed portion. When in an uncomplicated case of phlebitis the clot has undergone early and rapid disintegration and the blood current through the vein can be felt to be re-established movement may be allowed at an earlier period and may be cautiously commenced when the vein is entirely free from pain and tenderness.

When a large trunk, such as the femoral or iliac vein, becomes permanently blocked many small superficial veins become developed which not infrequently become inflamed in consequence of some local irritation. A little tenderness is felt on some part of the skin and on careful inspection a narrow branching line of slight redness is seen, under which is felt the soft cord of a minute blocked vein. If the limb is kept quiet for a few days and the tender vein covered with a warm lotion of boric acid or lead or painted over with oxide of zinc lotion the little vein usually soon becomes again pervious, the tenderness and redness subside, and the trouble is at an end, but if the condition is neglected the phlebitis may spread to larger veins or other small branches may become involved and a troublesome area of inflamed skin is left, causing much irritation and annoyance. When the patient first begins to walk a soft elastic bandage should be gently applied from the foot to the groin and carried in a figure-of-8 round the iliac region of the abdomen, the skin having first been dusted with powdered boric acid. The

upright posture should be maintained only for a very short time at first; a walk of about ten minutes will cause the limb to become painfully congested and necessitate a rest in the recumbent posture with the limb well raised. Standing should be as much as possible avoided, but the exercise of the muscles should be gradually increased. If all goes well, and if the blocked vein is quite free from tenderness, massage may be commenced after about three months. This should consist of gentle rubbing in an upward direction, the actual course of the blocked vein being avoided, and the limb dusted freely with boric acid. It should be done in the evening and no exercise should be taken afterwards. The foot of the bed should be raised on blocks six or eight inches in height. As more use of the limb becomes possible it will be best to substitute for the bandage a well-fitting elastic stocking. If the femoral vein is blocked this should be in two pieces, the lower reaching from the foot to just below the knee, the thigh-piece from below the knee to the fold of the groin with a peak ending in a strap for attachment to braces. If the obstruction extends above Poupart's ligament to the iliac veins or the vena cava a combined thigh-piece and abdominal belt should be worn; and this should be adopted from the beginning, so as to prevent as far as possible the enormous dilatation of the superficial collateral veins at the groin and iliac region which will otherwise take place. Probably no care will prevent considerable enlargement of these veins, and a graduated pad should be introduced into the belt when the enlargement becomes apparent. But whichever part of the venous trunk is obstructed it is a mistake to delay the application of the elastic support until the superficial veins begin to dilate; every effort should be made from the first to encourage the return of the blood by the deeper branches. In most cases the thigh pieces can be discarded after four or five years, but in some instances the great development of the collateral veins of the iliac region necessitates continued support and protection.

Great care should be taken to avoid all constriction of the limb. Elastic stockings are often made with a tight band at the upper limit which acts like a garter; this is harmful and unnecessary, for if the stocking is made to measure and fits well it will keep in place without any such addition. The patient should be instructed to take every opportunity of keeping the limb raised, especially towards the end of the day; exercise should be taken in the early part of the day; hard seats, especially chairs with a hard rim at the front of the seat, should be avoided and a footstool used so as to slightly raise the front of the thigh from the chair. It is astonishing how slight an amount of pressure will obstruct the venous circulation, especially where it depends largely upon the superficial veins; the weight of the arm resting upon the thigh, the weight of the leg if crossed over the opposite limb, is sufficient to seriously impede the venous return. Towards the end of the day, especially if there has been much standing, the limb will become somewhat swollen, heavy, and congested, and this is often accompanied by a good deal of aching, itching, and discomfort. The best remedy for this is a thoroughly hot bath, followed by gentle massage with the limb raised.

Among the remoter troubles resulting from blocked crural veins is the development of a plexus of small tortuous veins between the inner ankle and the heel which leads to a condition of irritation and malnutrition of the skin in that situation which may even go on to ulceration. When these veins begin to appear a thin pad of lint or felt may with advantage be introduced under the stocking behind the inner malleolus; and when signs of irritation of the skin are observed a very useful application is an ointment of hazeline and lanoline gently rubbed over the part at night.

Groups of small, slightly raised, bright red spots on the skin somewhat resembling psoriasis are also met with, chiefly about the inner side of the knee and the outer side of the thigh. These spots appear usually after long standing and mostly in cold weather; they itch or burn and rapidly disappear with rest. The lanoline and hazeline ointment is a suitable application. Sometimes after much standing or prolonged walking bright red patches appear on the legs attended by a sense of heat but not of itching; the redness disappears on slight pressure and fades gradually after a day or two of rest. These conditions are much benefited by the hot bath.

There is seldom any subcutaneous oedema such as gives rise to pitting on pressure but there is usually some permanent enlargement of the affected limb. I do not think that

this increase in the size of the limb is due, as was suggested by Sir James Paget,²² to muscular growth, but I believe it depends upon an increase in the intermuscular and subcutaneous cellular tissue; for the outline of the muscles and their visible contraction are obscured and the muscular power of the limb is diminished and not increased. The morning and evening measurements of the limb will be found to differ considerably and this is certainly due chiefly to fullness of the vessels, though it may depend partly upon intermuscular oedema. Moreover, in two of the cases related by Sir James Paget²³ the enlargement of the limbs disappeared under the use of friction and the hot douche, which would hardly have been the case if it had been due to muscular growth.

The measurements which I had the opportunity of taking in a case nine years after blocking of the femoral and external iliac veins were:—

	Affected limb.		Sound limb.
Morning	circumference of thigh = 21 inches		20 inches
Evening	" " = 21 1/2 "		
Morning	" calf = 13 1/2 "		13 "
Evening	" " = 14 "		

Sir Prescott Hewett²⁴ speaking of the after-history of cases of phlebitis says: "When seen in after years the condition of the limb in these cases of blocked veins has varied very much. In a few the limb recovered its usual appearance, save, perhaps, a very slight increase in its size, in no way interfering with the freest action, for I have known one gentleman who, after an attack of this kind which confined him to his couch for months, returned to deer stalking with as much zest and activity as before. In other cases the limb remained more or less swollen and consequently with its action more or less interfered with, the circulation being carried on by anastomosing veins, largely increased in size and tortuous."

The bones of the affected limb may appear to be enlarged but examination by the Roentgen rays shows that this is due to increase in the subperiosteal connective tissue, not to osteal growth. After some years, as the obstructed venous return is compensated by the development of the collateral veins, the enlargement of the limb may disappear or greatly lessen, its shape becoming more natural and the outline of the muscles more apparent. This improvement will be aided by hot baths, followed by gentle rubbing in the direction of the venous current, by moderate use of the limb, and by elastic support to the veins.

The heart, of course, has much extra work thrown upon it by venous obstruction, and when exercise is first resumed in a case of blocked vein dyspnoea is easily provoked; care must therefore be taken to put no needless strain upon the heart—e.g., by rapid walking or ascending hills. It should be remembered that if the resistance in the vessels is such as the heart can overcome, hypertrophy of the heart takes place to meet the increased resistance; but that if the resistance is greater than the heart can overcome, dilatation of the heart results. But gentle exercise is good and sunlight and pure air are very beneficial; for the better the oxygenation of the blood the more easily it circulates and the less is the fatigue of muscular action. Moreover, the more thoroughly the blood is oxygenated the less prone is it to thrombosis. It has been proved²⁵ that the inhalation of oxygen gas, or even the increased intake of oxygen by rapid respiration, diminishes the coagulability of the blood.

The sufferer from blocked veins who wishes to reduce the inconvenience to a minimum must live on light diet, be careful to avoid constipation or fecal accumulation, take moderate exercise early in the day and rest in the evening, avoid hurried, severe, or prolonged exertion, clothe warmly but lightly, keep out of hot and ill-ventilated rooms, breathe pure air, and seek the sun.

The necessary limit of the time allotted to these lectures has, of course, obliged me to omit much that might have been said upon this most interesting subject—the coagulation of the blood within the living vessels, but one thing which will probably have become apparent to you is the small amount of our certain knowledge concerning the blood

²² Clinical Lectures and Essays, p. 307, Medical Times and Gazette, March, 1889, p. 261. Here Sir James Paget says that he has not dissected a case and "can only guess that there is a real overgrowth of muscles."

²³ Clinical Lectures and Essays, p. 305.

²⁴ Transactions of the Clinical Society of London, vol. vi., p. 57.
²⁵ Brit. Med. Jour., July 14th, 1891. Hasebroek: Zeitschrift für Biologie, 1892.

—that wonderful living fluid which carries life and nourishment to every tissue, giving to the body its power of action and of feeling, and to the brain its power of thought and memory; which is so delicately constituted that by the invasion of a minute organism or the raising of its temperature two or three degrees it may be so profoundly altered that the whole body at once becomes disturbed, action impeded, and thought confused; and which, if it should undergo clotting within the vessels is changed from a source of healthy action to a cause of mortal danger or even of sudden death.

I say how little we really know of the vital chemistry and physiology of the blood. Here is a wide and fertile field for our advancing physiological chemists. I have only tried to make some small contribution to our clinical knowledge and I desire to thank you, Mr. President and the Council of the College, for giving me this opportunity and my audience for the kind patience with which they have listened to these lectures.

A CASE OF SPLENOMEGALIC POLYCYTHÆMIA, WITH REPORT OF POST-MORTEM EXAMINATION.

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THE patient in this case, a farm labourer, 45 years of age, was admitted into the London Hospital on July 28th, 1905, under the care of Dr. F. J. Smith at the request of Mr. A. Leigh Chignell. We are indebted to Dr. Smith for permission to publish the case, as he was away on holiday during most of the time that the patient was under observation. The patient's earlier history is contained in the following account kindly furnished by Mr. Chignell.

The patient first came under my care about seven years ago when I was called to see him as he had been found on the road in a fit, having fallen down while coming home from work. When seen he was in a dazed condition and the symptoms as described to me were "that he twitched all over and his body was thrown into various movements and was believed to be unconscious." There was no return of any of the symptoms and he resumed work in four days. He enjoyed good health until three and a half years ago when he suffered from a large carbuncle on the left side of the chest. Under treatment this healed up satisfactorily. He first noticed a peculiar twitching of the muscles of the face and especially of the mouth at this time and his face became pigmented and covered with acne spots. After six weeks he returned to his work. On Jan. 30th of this year he came to me for ulcerative stomatitis of a severe form affecting the whole mucous membrane of the mouth. He had been feeling uncomfortable after food for some time and the bowels were constipated. Under treatment the stomatitis recovered but the dyspeptic symptoms continued and giddiness and a feeling of faintness complained of. He attempted to return to work but fell down on the way and the symptoms from this time increased and vomiting appeared. He also lost flesh. The vomiting was irregular, occurring sometimes frequently in the course of one day whilst at others it would be absent for several days in succession. In June hæmatemesis occurred several times but the amount of blood brought up was small. The pulse at this time was slow and the heart appeared displaced. The temperature was normal or subnormal throughout. He complained of no pain except in the head, but there was tenderness on pressure over the stomach and spleen. Some enlargement of the spleen was noticed in March but it may have been present earlier. Giddiness was the most distressing symptom and grew worse, facial twitching also appearing. During the last weeks that he was under my care he became very forgetful. He was always a steady man and hard worker.

The family history showed nothing of interest except that the patient's father was alleged to have died from ague at the age of 55 years. On admission the patient was found to be a well-developed man of medium build. His face was covered with acne; the lips and nose were of a deep purple colour; there was no clubbing of fingers or oedema. The teeth were mostly carious and the gums were swollen, spongy, and inclined to bleed. On abdominal examination a large tumour was felt in the left side projecting from beneath the ribs and extending to the middle line and downwards to the umbilicus. The tumour was firm, dull on percussion, not tender, and exhibited a distinct notch. The liver could not be felt but seemed slightly enlarged on percussion. There was no ascites. The apex beat was in the fourth space, one inch outside the mid-clavicular line and of a heaving character. The area of cardiac dulness extended to the third rib above and to the left edge of the sternum.

The heart sounds were clear. The pulse was slow (from 50 to 60 beats a minute) and of good volume. The arterial walls were very much thickened and tortuous. There were no enlarged glands. The lungs were normal. The average amount of urine passed was about from 30 to 35 ounces a day. The specific gravity varied from 1022 to 1030; a faint trace of albumin was present during most of his stay in hospital but no sugar. The knee-jerks were normal; the pupils reacted sluggishly to light. On ophthalmoscopic examination the discs were rather red and the retinal veins were engorged. The temperature during the whole illness was normal or slightly subnormal but rose to 108° F. at death.

Examination of the blood and blood pressure.—On admission blood taken from the lobe of the ear contained 8,000,000 red cells per cubic millimetre and 110 per cent. hæmoglobin (Haldane). The white cells were not estimated. On August 9th the blood pressure (Riva Rocci) was 140 millimetres of mercury. On the 11th blood taken from the ear contained 11,000,000 red cells, 17,160 white cells, and 120 per cent. hæmoglobin. On the 28th three and a half ounces of blood were withdrawn from the arm and citrated. The blood pressure just before the venesection was 130 millimetres and just after 145 millimetres. The viscosity of the citrated blood was estimated by Dr. F. Parkes Weber, who found that by the method which he has previously described¹ the coefficient of viscosity of the blood was 11·8 times the coefficient of viscosity of water. The specific gravity of the citrated blood estimated by the method of weighing was 1·071. On the 30th a drop of blood from the ear contained 22,000 white corpuscles per cubic millimetre. A differential count which Dr. A. E. Boycott was kind enough to make gave the following result:—

Differential Count of White Cells.

	Per cent.	In c.mm.
Lymphocytes	5·6	1232
Intermediates	2·4	528
Large hyalines	4·0	880
Neutrophiles	82·8	18,216
Eosinophiles	2·8	616
Mast cells	2·4	528
	100·0	22,000

No abnormal leucocytes. Nothing abnormal in red cells. No nucleated red cells found.

On Sept. 1st a drop of blood from the ear contained 7,500,000 red cells and 130 per cent. of hæmoglobin. On the 16th a drop of blood from the ear contained 20,000 white cells, of which the following was Dr. Boycott's differential count:—

	Per cent.	In c.mm.
Lymphocytes	4·4	880
Intermediates	3·2	640
Large hyalines	3·2	640
Neutrophiles	83·2	16,640
Eosinophiles	3·6	720
Mast cells	2·4	480
	100·0	20,000

Nothing abnormal about red cells. No nucleated red cells found. No myelocytes found.

Progress of the case.—The patient complained for some time after his admission to hospital of pain in the back of the head and would often hold his head between his hands. There was never any vomiting; his bowels were constipated. Shortly after admission he began to be troubled with failure of eyesight which gradually increased until he became quite blind. The fundi were examined on several occasions but nothing was found beyond slight hyperæmia. The failure of vision was accompanied by a great mental change; he became dull and stupid and unable to understand what was said to him. He was restless at nights and slept badly. This progressed till finally a state of complete somnolence was reached when he lay like a log in bed and was wet and dirty but still able to swallow food when it was put into his mouth. The tumour in the abdomen underwent a marked change during this time and became somewhat tender and gradually receded until finally it could be just felt one

¹ Paper with Mr. J. H. Watson, Transactions of the Clinical Society of London, 1904, vol. xxxvii., p. 131.

finger's breadth below the costal margin. Towards the end the cyanosis of the face and extremities became even more marked and he was quite unable to swallow anything. Death took place with coma and hyperpyrexia on Sept. 21st, about eight weeks after his admission to hospital. The treatment employed consisted in the administration of iodide and citrate of potash. Large saline enemata were administered with a view to dilute the blood and on one occasion he was bled to 16 ounces. None of these measures, however, had any effect upon his condition.

Necropsy.—The post-mortem examination was performed by Dr. Miller with the following result. Rigor mortis was present. The external appearances were as follows: the body was greatly wasted; the face was florid; there was deep congestion of the back. There were no enlarged glands. On opening the abdomen the muscles and cellular tissue of the abdominal wall were found to be deep red. The veins of the mesentery and intestines were greatly injected. Dense adhesions were found enveloping the spleen and between the liver and diaphragm. The liver, spleen, stomach, duodenum, mesentery, pancreas, suprarenals, and kidneys were removed together and dissected after removal. The spleen (which weighed 33½ ounces) formed a tumour projecting considerably below the costal margin. It was densely adherent to the surrounding structures and was large, hard, and of irregular shape. On section it was found to consist partly of purple structureless spleen pulp and partly of many areas resembling infarcts. They were of various sizes and sharply demarcated from the spleen pulp. They were firm and fibrous at the periphery but somewhat softer in the centre. Most of them were yellow but a few were a dull red. There were two small round accessory spleens. The liver weighed three pounds four ounces; its anterior surface was densely adherent to the diaphragm; the capsule was smooth elsewhere. The liver substance was unduly firm and very greasy. It was bronze-red in colour. There were not much congestion and no appearance of nutmeg. As regards the kidneys, the right weighed six ounces and the left seven ounces. The perinephric fat was yellowish-red. The capsules were thin and stripped readily; there were no cysts. The surface was smooth. The colour was a uniform deep purple. The cortex and medulla were natural. The pelvis and vessels were natural. No gross morbid lesion was found. Both suprarenals were large, soft, and difficult to define. The condition was apparently a hyperplasia. No gross morbid lesion was present. They each weighed one and a half ounces. The ureters, bladder, prostate, and testes were natural. The pancreas was firm and dull red in colour; it was not apparently altered in size or shape. As regards the alimentary system, the œsophagus was natural. The stomach was natural in size and shape. There was great injection but no ulceration. The duodenum and the small and large intestines showed great injection but no ulceration. The appendix was healthy. The mesentery showed great injection of veins. There was no enlargement of glands. The abdominal aorta was somewhat stained; otherwise there was no change. The vena cava and iliac veins were natural but very full of black fluid blood. The tongue was natural. The tonsils and the glands of the neck were not enlarged. The thyroid weighed 13 ounces. Its lateral lobes were enlarged, unduly firm, and of a red yellow colour. No trace of the thymus was found. The larynx and trachea were healthy. The diaphragm was at a slightly higher level than normal—the fourth space on the left side and the fourth space on the right side. The heart was pushed up into the fourth space. The pleura were very dense. There were adhesions between the diaphragm and the base of the lung on each side; otherwise they were free. The lungs were small and aerated throughout. There were many subpleural ecchymoses. A few small, dry, hard patches of purple substance peripherally situated and wedge-shaped were found, resembling infarcts. No sign of tubercle was present. The pulmonary veins were enormously distended with black fluid blood. The bronchial glands were not enlarged. The pericardium was not thickened; there were no adhesions. There was a slight excess of clear fluid. Some sub-pericardial ecchymoses were seen about the base. The heart weighed 12½ ounces. The right side and the left auricle were full of black fluid blood. The left ventricle was almost empty and firmly contracted. The endothelium was stained. The myocardium was difficult to cut and extremely fibrous in patches, especially in the papillary muscles. The valves and orifices were not altered. The endothelium was natural. The coronaries were not changed. The aorta

was slightly stained. The left femur was sawn in half lengthwise; the upper quarter was red and with cancellous bone; the middle half was deep red and pulpy; and the lower quarter was yellow and with cancellous bone. The marrow of the right fourth rib was deep red and fluid. The skull was opened and the dura mater was found to be intensely injected to the smallest veins. The dura mater was opened and considerable œdema of the pia arachnoid and injection of the meningeal vessels were found. There was no gross change in the vessels at the base. The brain weighed 3 pounds 4 ounces; it was natural in size and shape. The occipital poles were different. Examination after hardening showed that the tips of both occipital lobes, the tip of the left temporo-sphenoidal lobe, and the extreme edges of the lateral lobes of the cerebellum were the seat of dry, almost powdery, yellow softening. The left lenticular nucleus and the right optic thalamus were red and disintegrated. The pituitary body was apparently natural. Microscopical examination of the kidneys, suprarenals, and thyroid showed enormous congestion of all the capillaries and a good deal of fibrous overgrowth in the adventitia of the small arteries. The cardiac muscle showed a high degree of fibrosis, the muscle bundles being imbedded in masses of dense fibrous tissue although the muscle fibres themselves appeared to be normal. The arterioles of the heart wall showed great thickening of the adventitia.

Specimens of the spleen, bone marrow, and liver were submitted to Dr. J. C. G. Ledingham of the Lister Institute who kindly reported upon them as follows:—

Report by Dr. LEDINGHAM.—"Paraffin sections of the spleen and marrow fixed in sublimate were stained with hæmatoxylin-eosin, van Gieson's picro-fuchsin, hæmatoxylin, Unna-Pappenheim's methyl-green-pyronin, and Giemsa's azur-eosin.

Spleen.—A section was made through an infarct-free area. There is no increase in the connective tissue of the spleen trabeculae nor does the pulp reticulum show any tendency towards fibrosis. In parts, however, the supporting tissue, especially in the vicinity of the large blood-vessels, presents a broadened-out and somewhat hyaline appearance resulting from lymph transudation. The Malpighian nodes are represented by a few small scattered remnants formed of three or four concentric rows of lymphoid cells mingled with clumps of hyaline material. These small nodes are not sharply differentiated from the surrounding pulp and some of them contain, besides hyaline masses, numerous pigment particles and nuclear detritus either lying free or imbedded in the cytoplasm of epithelioid cells which have wandered in from the periphery of the node. The most marked feature of the spleen pulp is the extreme congestion of the venous sinuses, the thin walls of which have in many places given way. A large number of these channels, however, still retain their endothelium intact. The following cell types are met with in the spleen pulp. 1. Small lymphocytes and large non-granular mononuclear cells. These are the most frequent types. 2. Large mononuclear cells with vesicular nuclei and strongly basophile protoplasm (basophile myelocytes) occur here and there in small clumps. 3. Polynuclear neutrophile cells occur in large numbers. Small foci formed entirely of these cells along with nuclear detritus are often observed, suggesting almost some infective process. No organisms of any kind were detected in them (careful search was made for tubercle bacilli). 4. Mononuclear and polynuclear eosinophile cells were present in small numbers. 5. A few megakaryocytes were noted. 6. Epithelioid cells were met with here and there, some of them apparently exercising phagocytic functions. 7. The pulp was carefully searched for the detection of erythroblastic foci and a very few minute clumps of proliferating nucleated red cells were observed. Their nuclei frequently presented karyorrhexis or even actually budding, a feature to be noted in the marrow foci (*vide infra*).

Numerous sections were made through portions of spleen containing the infarct-like areas noted in the protocol. The centre of the caseous mass consisted of amorphous material with a few leucocyte shadows. The periphery was formed of dense connective tissue containing congested blood-vessels and outside these again was another connective-tissue zone containing enormous numbers of extravasated red blood corpuscles. Numerous epithelioid cells containing in their interior blood pigment and red blood corpuscles in various stages of disintegration were also present. No tubercle bacilli were detected in the areas after careful search, but so far as their histology went in the absence of actual

tubercles or bacilli they might very well represent the result of some tuberculous process. In view of the small number and size of erythroblastic foci in the spleen pulp one cannot conclude that the spleen was exercising any important function as a red blood cell forming organ. Nor was there much evidence of active red cell destruction except as already noted in the vicinity of the caseous areas.

Marrow.—The fat cells of the marrow have not entirely disappeared. The most notable feature is the dilatation of the thin-walled blood-vessels with red blood corpuscles. These congested blood-vessels traverse the whole section but there are no hæmorrhages into the substance of the marrow proper. The endothelium of the sinuses remains quite intact. The following cell types were noted. 1. Large mononuclear cells with somewhat vesicular nuclei and basophile protoplasm were most frequent. In morphology these cells correspond to the basophile myelocytes or undifferentiated cells of Dominici. Neutrophile myelocytes and polynuclear cells were present in fairly large numbers, though the granulation was difficult to demonstrate. Transition forms can readily be traced between these basophile cells which may sometimes attain a large size and the giant cells presently to be described. 2. Eosinophile cells, both mononuclear and polynuclear, occur in large numbers and in Giemsa preparations make a remarkably beautiful picture. 3. The giant cells present are of two types. Sometimes as many as ten may be seen in one field of the oil immersion Leltz $\frac{1}{12}$ th, oc. 4. Cells with large-lobed nuclei assuming the most bizarre shapes are most numerous. The protoplasm of these cells is slightly basophile. Many of them appear to be developed directly from the basophile undifferentiated cells already noted and in which mitotic figures are frequent. The second type of giant cell possesses a straggling irregular nucleus which is intensely pyknotic and a cytoplasm which is inclined to be acidophile. These cells frequently contain entire leucocytes in their interior. They are evidently degenerated megakaryocytes. 4. Lymphoid cells are not very numerous. 5. Mast cells occur in small numbers. 6. With the Unna-Pappenheim stain plasma cells are found to be as scarce in the marrow as in the spleen pulp. 7. Here and there one sees erythroblastic foci, generally of small size but sometimes fairly large clumps of developing nucleated red cells are met with. The nuclei stain intensely while the cytoplasm takes on a yellowish stain. Frequently the nucleus is broken up or presents a budding appearance. It is possible that this irregular division is the explanation of the great variations in size and shape of the red cells in blood films *intra vitam*. One could not conclude from a single section that red blood cell formation was actively proceeding, but when one reflects that large tracts of marrow were in a similar condition one must infer that the polycythæmia is to be explained by a general increase of the erythroblastic functions of the marrow. The large number of granular cells in the marrow certainly indicates an increase in the leucoblastic function of that tissue and would explain the polynuclear leucocytosis in the circulating blood that is so marked a feature of most of the recorded cases.

Liver.—The interacinic capillaries are greatly congested with red blood cells, though polynuclear cells are also frequent. The liver lobules and acini are quite intact and the cells apart from very slight fatty infiltration appear healthy. Clumps of bile pigment occur in some of the liver cells and here and there one sees the lumina of the smaller bile channels filled with inspissated bile thrombi. There are no focal necrotic areas and no micro-organisms.

Remarks.—There can be no doubt that clinically this case belongs to the group characterised by chronic cyanosis with polycythæmia and splenomegaly, of which examples have been recorded by Vaquez, Saundby and Russell, Rosengart, Osler, Parkes Weber, and others, and for which Parkes Weber² has suggested the name of "myelogenic polycythæmia." The increased number of red cells (from $7\frac{1}{2}$ to 8 millions per cubic millimetre) and the splenic enlargement together pointed to such a diagnosis. In addition, there was found by Parkes Weber an increase in the viscosity of the blood such as he has described in a previous case of his own, whilst a polynuclear leucocytosis which was present in our case has also been met with in some previously recorded examples of the disease. The cerebral and mental symptoms, too, which were such a marked feature in our patient have also been remarked in such cases before.

We are fortunate in being able to add another to the few

recorded necropsies on cases of this group, and as far as an explanation of some of the most striking clinical symptoms is concerned the result was satisfactory enough. The loss of vision, for instance, and along with it probably the attacks of giddiness and the final stupor, may be held to be explained by the extensive areas of thrombotic softening in the occipital lobes of the brain. It cannot be said, however, that much light is thrown upon the pathology of the disease by a study of its morbid anatomy. That the amount of blood-forming tissue in the bone marrow was increased there can be no doubt, which, with the absence of any signs of increased blood destruction in the liver, would point to the polycythæmia being the result of an increased formation of red cells. The enhanced viscosity of the blood which is the consequence of the polycythæmia and the abnormal strain which it throws upon the arterioles may perhaps explain the high degree of vascular fibrosis met with. The fibrotic degeneration of the heart was certainly a most striking feature of the morbid anatomy but was perhaps merely secondary to the thickening of the walls of the coronaries.

As regards the softening in the occipital lobes of the brain and the large pulpy areas in the spleen, there can be no doubt, we think, that they were due to thrombotic necrosis, the consequence of stagnation of blood which the high viscosity of the latter tended to induce. We found no evidence of any primary tuberculosis of the spleen such as has been alleged to occur in some of these cases and are inclined to think that in such descriptions areas of infarction may have been mistaken for tuberculous foci.

In conclusion, we would like to take the opportunity of expressing our indebtedness to those who so kindly helped us in the investigation of the case; to Dr. Parkes Weber especially for much advice and suggestion and for estimating the viscosity of the blood; to Dr. Boycott for his careful reports on the histological features of the blood; and to Dr. Ledingham for his minute investigation of the histology of some of the more important organs.

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SPIROCHÆTA PALLIDA (SPIRONEMA PALLIDUM) IN SYPHILIS.*

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(Concluded from p. 657.)

In Siegel's papers,^{1,2,3,4} in addition to the methods of staining and the description of the characters of his cytorrhyses luis, some details of previous discoveries in syphilis are given—e.g., Klebs, Döhle, Stassano, &c.

Fr. Schultze,¹²⁹ Freund,¹³⁰ and Merk¹³¹ contribute papers on the cytorrhyses.

Spirochæta in yaws.—Castellani in Ceylon^{112, 114, 115} and Wellmann in Central Africa¹¹⁶ about the same time found *spirochæta* in films from the cutaneous papules of yaws some of which in form correspond closely to those of syphilis. I have seen one of Castellani's preparations through the kindness of Dr. J. O. Wakelin Barratt. There is no question as to the great similarity to *spirochæta pallida*. Castellani will not draw any conclusions as to any possible relationship between yaws and syphilis, though in this connexion it is of interest that Mr. Jonathan Hutchinson¹³¹ holds in the face of great opposition that they are closely related, probably identical diseases.

Staining methods.—As I have indicated, Giemsa's method, or various modifications of it, is generally considered the best, but Leishman's modification of Romanowsky's stain also gives good results (Castellani,¹¹⁵ Dodgeon¹²⁷), while in the hands of Leishman himself it gives better results than Giemsa's stain. It must be acknowledged that the new Giemsa's stain, in containing methyl alcohol as a solvent, approximates to Leishman's stain which existed before it. Of Giemsa's new solution 15 cubic centimetres are added to 10 cubic centimetres of distilled water. The films which have been previously fixed in alcohol are stained for an hour at room temperature. The films may be

* The "superior" or raised, figures occurring throughout refer to the bibliography at the end of the article.

left in the stain over-night. After washing and drying with filter paper they are examined in cedar oil or balsam. Details are given in his papers.^{117 118} Davidsohn¹¹⁹ strongly recommends cresyl violet, Herzheimer¹²⁰ Nile blue, and later¹²¹ an aqueous solution of gentian violet after preliminary fixation in alcohol. Hoffmann,¹²² Oppenheim and Sachs,¹²³ and Ploeger¹²⁴ stain with anilin water or carbol gentian violet, Poleger finding that preliminary fixation in alcohol is not necessary. Carbol-fuchsin is also used by several investigators. Marino's azur solution is used by others—e.g., Metchnikoff. Weitlauer¹²⁵ claims success with Löffler's methylene blue. Bertarelli and Volpino,¹²⁶ Levaditi,¹²⁷ Paschen,¹²⁸ and Buschke and Fischer¹²⁹ have succeeded in demonstrating spirochæta in sections by silver impregnation methods and such as are used for the demonstration of the flagella of bacteria, while Reitmann,¹³⁰ with a modification of Sclavo's method, and Proca and Vasilescu¹³¹ with a modification of Pitfield's method for staining flagella have also been successful. In my experience the last gives good results. In addition to the authors named above, Schaudinn,⁷ Nicolas, Favre and André,¹³² Burnet,¹³³ Bandi and Simonelli¹³⁴ discuss and criticise the various staining methods.

Spirochæta in other conditions.—Spirochæta, sometimes approximating in form to spirochæta pallida but mostly differing from it, have been found, amongst others, by Pollard¹³⁵ in hospital gangrene, by Buday¹³⁶ in noma and gangrenous tonsillitis, by Bonhoff¹³⁷ and Süßle¹³⁸ in vaccine pustules, by Borrel¹³⁹ in several cases of mouse carcinoma, by Hoffmann and Mulzer¹⁴⁰ in ulcerated carcinoma, by Sobornhelm and Tomaszewski¹⁴¹ in cancer of the lips and balanitis, and by Kiolomenoglou and von Cube¹⁴² in various venereal and non-venereal conditions. O. Moritz¹⁴³ found somewhat coarse spirochæta in the bone marrow and in the muscular coat of the small intestine in severe anæmias and also in carcinomatous lymphangitis. He could not prove any relationship. As a rule all these spirochæta except those described in the last two papers are readily stained and by other characters easily distinguishable from spirochæta pallida.

Gathering together the details from this not quite complete survey of the literature on the subject, and from my own experience, I may now piece together an account of the characters of these spirochæta as at present understood. The names "spirochæta pallida," or "spirochæta pallidum," and spirochæta refringens are descriptive, the former staining faintly, the latter being markedly refractile in the living state. The spirochæta pallida is an extremely delicate organism, weakly refractile when living, vigorously motile, stained with considerable difficulty and difficult to demonstrate, requiring at least a magnification of 800, with good illumination. It is long, extremely thin and filamentous, of a distinct spiral or corkscrew shape, both when living and when fixed on the slide. It tapers at the ends to a sharp point. In length it varies from 4 to 20 μ ; in breadth it measures about 0.25 μ . The spirals number from six to 26, averaging from eight to ten. Not only are these spirals numerous but very narrow—not over about 1 μ —regular and deep. Schaudinn, Hoffmann, Herzheimer, and others describe terminal flagella, but all observers are not agreed upon this point. When these are double they may really represent the commencement of a longitudinal fission. The spirochæta may lie in clumps and occasionally form a felted mass. Löwenthal thinks that they are made up of several shorter (from 3 to 4 μ) individuals, or possibly these may be degenerative forms. With Herzheimer, Mulzer, and others, he describes a granule or localised swelling between the middle and one terminal third, which may represent blepharoplast rather than nucleus. Some describe a terminal globular body, the real nature of which has not yet been ascertained. It may simply be a loop at the end of the spirochæta. Herzheimer has described other bodies in, on, or near the spirochæta. At first it was thought to possess a vibratile membrane attached throughout its whole length, but this idea is given up by most authors, with the exception of Dalous, the appearance being put down as artefact. The absence of such membrane along with the possession of flagella are held to be characters distinguishing it from other spirochæta which commonly occur on ulcerated surfaces. Its motility is of three kinds: corkscrew, to and fro, and bending or lashing. In a film dried on the surface of glass the spirals may become stretched out owing to its becoming attached first at its extremities. By silver impregnation methods it has been demonstrated in sections of the

liver in congenital syphilis and in the primary and secondary stages of the acquired disease. It lies in the capillaries of the papillæ of the corium, chiefly lying up against the endothelium or in the lumen. Thence it makes its way into the surrounding tissues and works up between the cells of the Malpighian layer to reach but not to penetrate the stratum corneum. With Giemsa's stain, it takes a rose-pink colour, or slightly lilac if the staining be too prolonged. It may also be demonstrated by "flagella" stains and impregnation methods, by gentian violet, carbol fuchsin, cresyl violet, Nile blue, &c. Schaudinn places spirochæta pallida with the protozoa rather than with spirillar bacteria, allying it to the trypanosome group.

The spirochæta refringens is generally acknowledged to be of saprophytic nature and corresponds to the forms already described in normal smegma, in balanoposthitis, vulvo-vaginitis, on the surface of ulcers about the genitals, on venereal warts, in the mouth secretions, on the teeth, tonsils, in ulcerated carcinomas, and probably also the forms found in gangrene are closely related. It is thicker than spirochæta pallida, distinctly refractile. It may have a marked corkscrew shape and motion when alive but flattens out when dried in films, so as to have usually a wavy outline. The curves are flatter and longer than those of spirochæta pallida, measuring from 1.5 to 2 μ or more. It varies in length like the spirochæta pallida, measuring most commonly from 8 to 10 μ . It is usually described as having truncated ends but often it has tapering ends or one end is sharp and the other blunt. It possesses a vibratile membrane but no flagella. It stains easily, quickly, and deeply by all methods and with Giemsa's stain which is the only differential one as yet known it takes a purplish or violet colour. It occurs usually only on the surface of moist and ulcerated syphilitic lesions. Some describe it as invading the glands.

Demonstration of these parasites.—From the literature I have picked out the details as to 758 lesions examined by different workers and find that spirochæta pallida has been found most often in moist papules, mucous plaques, and condylomata, genital and extra-genital—159 positive and 26 negative. Next come hard chancres, excised or scraped—150 positive and 55 negative; non-ulcerated papules—92 positive and 31 negative. Success has not been as frequent in films made from excised or punctured buboes—52 positive and 30 negative—and rarely has spirochæta pallida been found in roseolar blood—four positive and 17 negative—or in the circulating blood—five positive and 37 negative.

In lesions with moist or ulcerating surfaces the spirochæta pallida is commonly accompanied by the spirochæta refringens and it is a very significant fact that most successes have been attained in such circumstances. From one's own experience the number of forms intermediate between the two, partaking to some extent now of the one, now of the other, is remarkable. It is sometimes extremely difficult, often impossible, to refer these forms to the one group or the other and it is easy to imagine how readily one's percentage of successful demonstrations of the spirochæta pallida in such lesions might be raised by having regard solely to tinctorial or morphological characters. Frequently, in perfectly stained Giemsa preparations I have seen forms, staining pink like spirochæta pallida, sometimes delicate but wavy or almost straight in outline like the spirochæta refringens and, moreover, not in isolated examples which might be explained as stretched spirochæta pallida, but in very considerable numbers. Other forms stain deeply like spirochæta refringens but they have a spiral outline like typical spirochæta pallida. As a rule, these forms are thicker than spirochæta pallida and do not present so much difficulty as the other class of intermediate forms. Still, the fact remains that some authors figure such forms as spirochæta pallida. As group characters one must take both tinctorial and morphological characters into consideration. The refinements of technique necessary to demonstrate flagella are too great to make their presence a point of great importance for the ordinary observer. When their presence is more widely confirmed, the methods of demonstration simplified, and staining results more constant, they might be of use in the diagnosis of the intermediate forms just referred to. It is regrettable that in condylomata and mucous plaques, the most infective lesions in the adult, these difficulties of diagnosis should be experienced.

Before making films from such lesions it is well thoroughly to cleanse the surface, as the better this is done the fewer saprophytic spirochæta are met with. This refers also to hard sores, ulcerated papules, and rupoid or crusty

syphilides. After cleansing the surface it should be scraped fairly deeply with a sharp spoon, the bleeding allowed in great measure to stop, and films (from six to eight) made from the material scraped away and from the bloody fluid which exudes. Some authors dilute these products previously to making the films with a drop or two of distilled water.

Hard chancre and papules, whether ulcerated or closed, may be excised, cut open from their under surface, and the expressed juice smeared over slides or treated by scraping, as in making films from moist or ulcerated lesions.

Blood.—Though several observers have found scanty spirochæte in the blood during life, either by puncture of the skin or of the spleen, it is necessary in general to take a larger quantity of blood than is available by these means and to treat it in the manner indicated first by Noeggerath and Staebelin. They adopted the method employed for the detection of trypanosomes in circulating blood. They take at least one cubic centimetre of blood from an arm vein, mix it with ten cubic centimetres of one-third per cent. acetic acid, centrifugalise and examine the deposit. One may remark that it is also possible, judging by analogy from the fact that many trypanosomes being of less specific gravity than the corpuscles remain in the supernatant fluid, that similarly all the spirochæte present may not be sent down by centrifugalising. Roseolar eruptions may be scraped or punctured and the blood examined, or following Levaditi and Petresco³⁰ small blisters may be raised over them by means of cantharides and the fluid examined after centrifugalising. Several authors—e.g., Bodin¹¹⁰—report the failure of Levaditi's method in their hands. If, as some think,¹⁰⁹ this lesion is caused by impaction of plugs of spirochæte in the capillaries of the papillæ they ought to be more easily demonstrable than they are at present.

Indurated buboes may be excised or punctured with a fairly stout hypodermic needle. After the usual antiseptic precautions the gland is punctured and the point of the needle kept near its surface so as if possible to receive some lymph from the peripheral sinus. The gland meanwhile should be massaged between the finger and thumb of the other hand. In view of the fact that some observers mix scrapings with a drop or two of distilled water to facilitate securing a thin film it is probably not of importance to insure the syringe being absolutely dry before using.

Congenital syphilis.—It is now a well-established fact that *spirochæta pallida* occurs very constantly in the blood and tissues of infants suffering from congenital syphilis. It has been found in the blood during life and in the organs after death, especially in the liver, spleen, adrenals, kidneys, bone marrow, lungs, and even once in the cerebro-spinal fluid. In the bullæ of pemphigus occurring in such infants Levaditi, Salmon, Hoffmann, and others have found *spirochætae* abundantly, often in clumps apparently the result of agglutinative action. This is very important in consideration of the great infectivity and virulence of congenital syphilitic lesions and is a fact greatly favouring an etiological relationship between *spirochæta pallida* and syphilis, as is also the fact that in tertiary syphilis, which is little or non-infective, most authors fail to find *spirochæta pallida* at all.

Fixation.—Most authors agree that the films, after drying in the air, should be fixed in absolute alcohol or alcohol-ether mixture for from ten minutes to 20 minutes or methyl alcohol for about five minutes. Schaudinn recommends that the films as soon as made should be exposed for two or three seconds to the vapour of osmic acid before drying and fixation in alcohol. For staining Giemsa's medium is most used. It is related to Lelshman's modified Romanowsky's stain, which gives as good results when one is expert in its use. Modifications of Pitfield's flagella stain—e.g.⁶⁰—give good results, but the spirochete appear thicker and coarser as well as darker than by other methods. This is still more evident in films and sections treated by silver impregnation methods.^{22 33 37} Schaudinn demonstrates the terminal flagella by Löffler's special method. Films are mounted in cedar oil or balsam.

The following points may be taken as axioms to be borne in mind. (a) Saprophytic spirochaetae are always present on ulcerated lesions, on moist papules and mucous plaques. These are often difficult to distinguish from *Spirochaeta pallida*. (b) The more thorough the preliminary cleansing the fewer of these seen. (c) *Spirochaeta pallida* may be somewhat deeply in the lesions and apparently in clumps. (d) On account of this one must make six to eight films. (e) A little blood is usually an advantage in the film as it assists in focussing and,

moreover, spirochaetae are often seen in apparent relationship to red blood corpuscles. (f) In the case of excised chancre and papules it is well to bear in mind that spirochaeta pallida is not demonstrable after from six to ten hours, even though the tissue has been kept on ice. They soon degenerate. (g) The films should be thin and should be fixed as soon as possible. (h) When using Giemsa's method the nuclei of the leucocytes should be stained of a deep brownish purple, almost black, colour, otherwise the spirochaetae will not be seen. (i) Decolourisers such as alcohol or weak acetic acid should, if possible, not be used as they tend rapidly to discharge the stain from spirochaeta pallida. This does not apply when the mordanting (flagella) methods are employed.

Cultivation.—Several attempts have been made to cultivate these spirochaete but so far without success; judging, however, from the successful cultivation of trypanosomes this should not be impossible. De Souza and Pereira⁶⁰ used human blood with 5 per cent. each of citrate of sodium and chloride of sodium. Bertarelli and Volpino⁶¹ added gland juice to human blood with 50 per cent. of citrate of sodium, incubating at 27°, 30°, and 37° C.

Control observations.—A very large number of these have been made by numerous workers. Most agree that *spirochaeta pallida* is not found in gonorrhoeal pus and buboes, epididymitis, soft chancres and associated buboes, phagedenic ulcer, venereal warts, non-syphilitic ulcers of the glans, inflamed phimosis (except in one case in which a masked hard chancre was suspected), balanitis, and balanoposthitis; nor in smegma in man or woman, scabies, foidie rash, verruca juvenilis, scrofuloderma and lupus, phthisical sputum, furunculosis, acne, sycosis, dental suppuration, acute dermatitis, dermatitis herpetiformis, herpes zoster, eczema acule and chronic, eczema seborrhoeicum, eczema papulo-crustosum, erythema exudativum multiforme, erythema nodosum, lichen ruber planus, psoriasis, pemphigus neonatorum, molluscum contagiosum, impetigo simplex and contagiosum, sarcoma and carcinoma of the penis and labia, epithelioma cutis, carcinoma of the lip, the rectum, the neck, and the upper jaw, fibroma of the mamma, hypertrophy of the tonsils, Vincent's angina, throat mucus and mouth secretions, normal skin, organs of newly born non-syphilitic children, and many other pathological and non-pathological tissues.

My own investigations embrace a comparatively small number of cases, the greater number of which have been obtained for me by Dr. Alexander M. McIntosh, clinical assistant in the lock wards of the infirmary, who has also assisted me in the microscopical investigation of several of them. I am also indebted to him for furnishing me with histories of most of the cases.

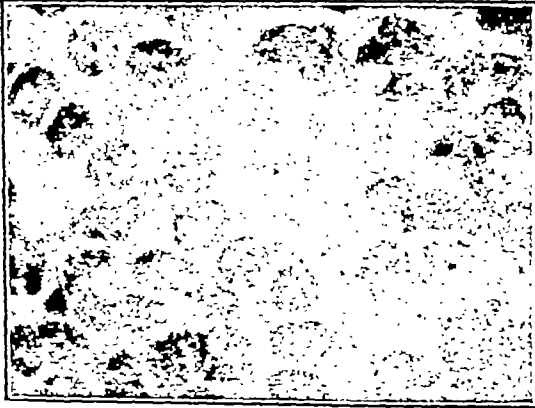
CASE 1.—A male, aged 18 years. He had had six weeks' illness. There were ulceration under the prepuce and gonorrhœa. On admission in October, 1905, there was a roscolar and papular rash over the whole of the body. There were œdema of the prepuce and a concealed hard chancre near the corona. The indurated groin glands were tender to the touch. Treatment consisted of mercurial inunctions; the prepuce was slit up, &c. The patient was readmitted at the end of November with gonorrhœal arthritis. *Spirochæta pallida* was found in the scrapings from a non-ulcerated papule on the thorax. The fluid from the groin gland proved negative. (Stain: Giemsa.)

CASE 2.—A male, aged 25 years. He had had frequent connexions, the last about three weeks before admission. There were sores on the penis and a rash appeared a few days later on the trunk and extremities (papular syphilide). There were mucous plaques over the pharynx. There were indurated buboes. On examination fluid from the glands gave a negative result. In scrapings from the hard chancre *spirochæta pallida* was present along with *spirochæta refringens*. Scraping from the dry papulo-syphonomas syphilide proved negative. (Stain: Glemsa.) Infection occurred about

CASE 3—A male, aged 22 years. Infection occurred about 12 months before admission. There were typical perianal condylomata. Scrapings from these showed numerous spirochaetae refringentes and many intermediate forms, many delicate, staining pink with Giemsa, but straight or wavy in contour. Some forms were thin, with narrow spirals, but faintly blue or purplish colour. There were also two months'...

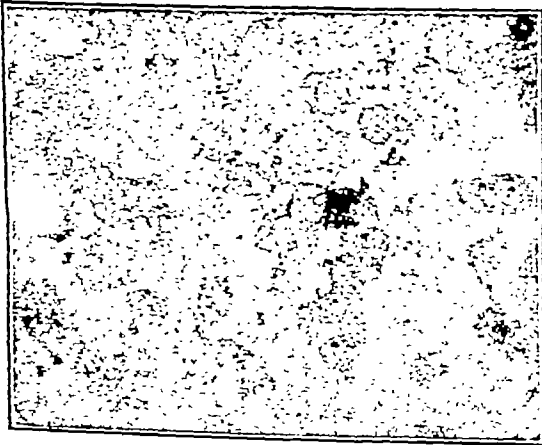
CASE 4.—A male, aged 19 years. There was a two months' history. There was a diffuse macular and papular rash over the face and the body. The prepuce was edematous and there was a concealed hard chancre. The glands were

FIG. 1.



Spirochæta pallida in apparent relation to a red blood corpuscle. Stained by Giemsa's solution. The organism appears in the centre of the field, sloping downwards from left to right.

FIG. 2.



Spirochæta pallida in relation to red blood corpuscles. Reproduction from an untouched negative. Film stained with Ross's stain. One-twelfth 4 in. Zeiss. Bellows 35 centimetres. The organism appears at the extreme top edge of the illustration, just under the figure 2.

FIG. 3.



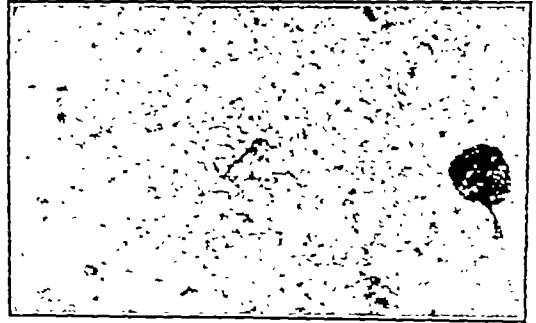
Film from condyloma latum showing numerous forms, mostly intermediate between *Spirochæta pallida* and *Spirochæta refringens*. Numerous bacteria stained by Giemsa's solution.

FIG. 4.



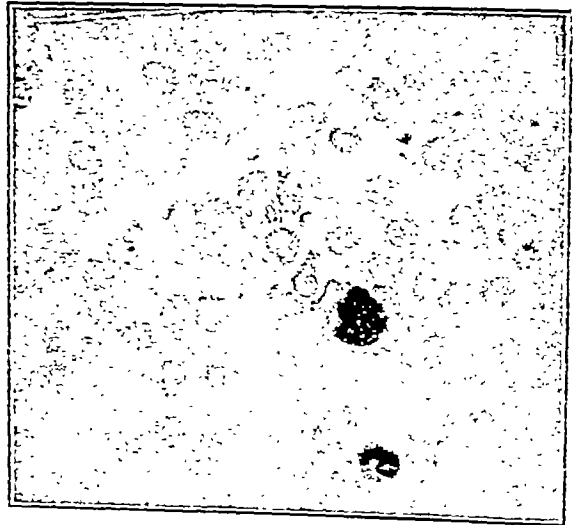
Spirochæta refringens. Two examples scraped from a syphilitic hard sore. Stained by Giemsa's solution.

FIG. 5.



Peculiar flagellated body found in film made from fluid expressed from the cut surface of a hard chancre. Stained by Giemsa's solution. $\times$ circ. 1200.

FIG. 6.



Peculiar loops and roundish bodies found not uncommonly in smears from lymph glands. Loops stained by Giemsa's solution (red). Roundish bodies stained by Giemsa's solution (blue).

not typical. Treatment consisted in circumcision and mercurial inunctions. Films made from the excised chancre contained a few *spirochætæ pallidæ* and a peculiar flagellated body. The films were examined by both Dr. McIntosh and myself. The body stained a brownish colour with Giemsa's stain and in it a clear spot resembling a vacuole was readily distinguished. It had at least six angles and to these whip-like appendages resembling *spirochætæ pallida* in tinctorial and morphological characters were attached. In the case of two of these the thickness was greatest near the body and gradually lessened as one passed out. The appearance was evidently not an artefact and the staining of the central mass was not like that of red blood corpuscles in the film. As to its nature one can make no suggestion and I have not seen another body like it. It does not altogether look like a red blood corpuscle to which *spirochætæ* are attached and the hæmoglobin of which is diffusing along their proximal portions. If it is of importance in connexion with *spirochætæ pallida* it is curious that no other observer has seen an exactly similar

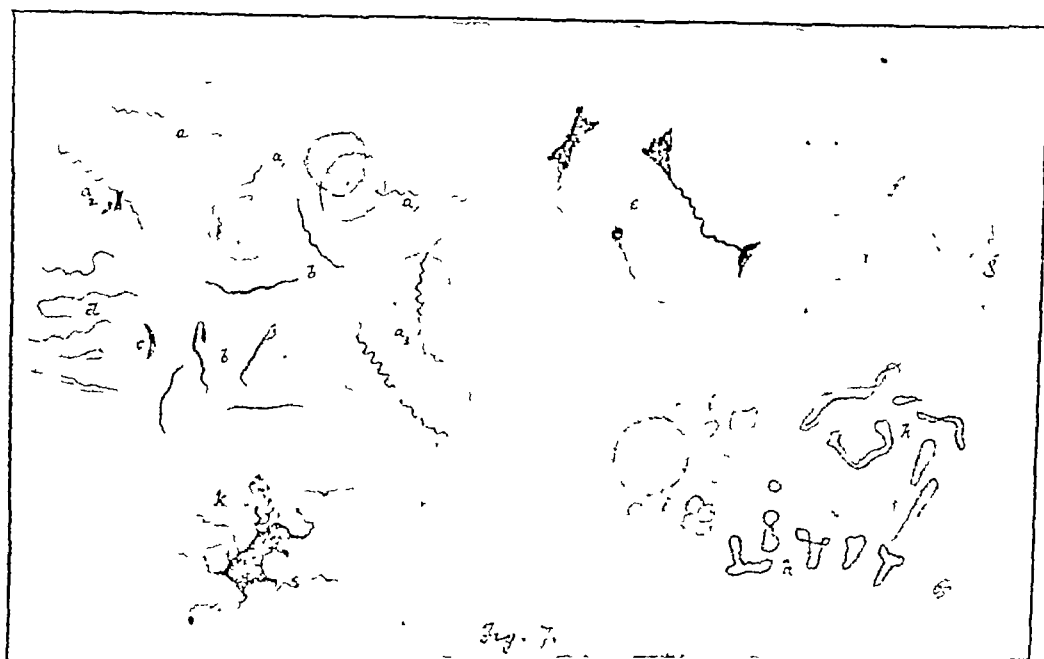
from the macular eruption proved negative. Films from the excised hard chancre contained numerous *spirochætæ pallidæ*. (Stain: Giemsa.)

CASE 7.—A male, aged 38 years. A hard chancre appeared five weeks before admission. There was a typical hard chancre on the dorsum of the penis. There were typical groin glands and papular syphilide. This was one of the first cases I examined. I made only three films from the chancre and could not find *spirochætæ*. (Stain: Giemsa.)

CASE 8.—A male, aged 23 years. 13 days after the last connexion an ulcer appeared on the right side of the glans and rapidly enlarged, eating into the glans deeply. There was no glandular enlargement or induration. There was no rash. The ulcer healed rapidly under treatment with lotio nigra. Films from the ulcer contained numerous *spirochætæ refringentes*. There were no *spirochætæ* corresponding to *spirochætæ pallida*. (Stain: Giemsa.)

CASE 9.—A female, aged 32 years. There was a doubtful ulcer at the fourchette. Films made from this contained numerous bacteria and spiral forms most corresponding

FIG. 7.



a-1 $\times$ about 1000, k $\times$ about 1200. a, *Spirochæta pallida*—a₁, in relation to red blood corpuscles; a₂, crossing an oblong body (particle of chromatin?) and apparently attached to one of the angles; a₃, crossing red blood corpuscles showing apparent thickening. b, *Spirochæta refringens*. c, Fusiform body like bacillus fusiformis, frequently seen in the ulcerated lesions. d, Intermediate forms from condyloma latum. e, Artefacts, drawn-out nuclei, &c. f, A thin filament of fibrin (?) simulating *spirochætæ pallida*. g, Wrinkled margin of deformed red blood corpuscle which might be mistaken for *spirochætæ pallida* encircling it. h, Peculiar loop-shaped bodies staining bright pink with Giemsa's solution found in several of the films from the glands. Their relationship to the *spirochætæ* though possible is not clear. i, Rounded bodies (Winckler's ?) in gland fluid. They stain a pale blue with Giemsa's stain. j, Peculiar body found once in hard chancre. Note the fusiform thickening seen in the course of the flagella like extensions.

object. This very fact tends to make one very sceptical as to its importance. Still, it is necessary to put the fact on record and a micro-photograph of it is reproduced. (Figs. 5 and 7.) In the same cases numerous *spirochætæ pallidæ* were found in the scrapings from a closed papular syphilide. (Stains: Giemsa and modified Pittfield's flagella.)

CASE 5.—A male, aged 22 years. Infection occurred seven weeks before admission. There were a concealed hard chancre and a diffuse and roseolar rash. There were typical indurated groin glands. Treatment consisted in circumcision and mercurial injections. On examination scrapings from the macular eruption proved negative. Films from the excised hard chancre contained numerous *spirochætæ pallidæ*. (Stains: Giemsa, modified Pittfield's flagella, and carbolic gentian violet.)

CASE 6.—A male, aged 19 years. Infection occurred from five to eight weeks before admission. There were a hard chancre on the prepuce and a macular eruption; the indurated groin glands were typical. Circumcision was performed and mercurial injections were given. Scrapings

morphologically to *spirochætæ refringens*, but a few delicate with narrow spirals like *spirochætæ pallida*. On account of this result I asked Dr. McIntosh to watch this patient carefully. About a week later a typical macular rash appeared on the thighs and thorax, the primary sore becoming quite typical. (Stain: Giemsa.)

CASE 10.—A male, aged about 24 years. He had had syphilis seven or eight years ago. Films made from scrapings of the sores contained numerous intermediate forms, some of which were apparently *spirochætæ pallidæ* and numerous forms corresponding to *spirochætæ refringens*.

CASE 11.—A female, aged 39 years. There were condyloma, papular rash, and indolent buboes in the groin and behind the sterno-mastoid. Films were brought to me which had been made from the condyloma. No *spirochætæ pallidæ* were found in six films.

CASE 12.—A male, aged 22 years. The last connexion was 11 days before admission. He was discharged on the ninth day. He had oedema of the prepuce, phimosis, and concealed soft chancre. There were no enlargement of the

glands and no rash. Circumcision was performed, removing the sore. Films showed no spirochætæ like spirochætæ pallida.

CASE 13.—A male, aged 24 years. The patient was infected with gonorrhœa and soft sores about eight months before admission. Now he had induration at the preputial orifice. There was a diffuse macular rash on the body with a few papules on the penis and pubes. Typical indolent buboes were present in the groin and behind the sterno-mastoid. The hard chancre was excised. Films were made from scrapings from the surface and fluid from the cut surface. In eight films no spirochætæ pallidæ were discovered.

CASE 14.—A male, aged 35 years. There was a three and a half months' history. There was a papulo-squamous syphilide on the legs and trunk which was drying up under treatment. He was twice examined with a negative result.

CASE 15.—A male, aged 20 years. There was a three months' history. He had perianal condylomata which were now drying up under local and general treatment. A few spirochætæ refringentes were found but no spirochætæ pallidæ.

CASE 16.—A male, aged 24 years. Infection occurred ten months before admission. A sore formed which never completely healed. Connexion meanwhile was almost fortnightly. Three weeks before admission the sore broke down extensively and became indurated and indolent. The glands were enlarged and hard. There was a papular rash. From fluid from the glands films were made. No spirochætæ pallidæ were found but a few peculiar tailed bodies like spermatozoa. These were possibly drawn-out nuclei of leucocytes. (Fig. 7, c.)

CASE 17.—A male, aged 19 years. Infection occurred four weeks previously to admission. On admission the patient had a concealed hard chancre. Circumcision was performed. Four weeks later (December, 1905) there were a dry parchment sore on the glans which was healing, and indurated groin glands. Scrapings from the sore on the glans showed presence of spirochætæ refringens and some intermediate forms, some of which approximated in form but not in colour to spirochætæ pallida. Some of them had a small dark body attached at one end. Fluid from the groin glands contained no demonstrable spirochætæ but numerous flattened or oval loop-like structures, staining bright pink with Giemsa's solution, were seen (Figs. 6 and 7). Some of these were shaped like the "eye" of the "hook and eye" of the dressmaker. In the same case there were rounded bodies varying in size from 1μ to 4μ , staining a delicate blue with Giemsa, sometimes single, sometimes in clusters, as if they had been contained within a phagocytic cell which had broken up in the process of making the film. These were probably products of the degeneration of cells. They are possibly analogous to the bodies described by Winckler. Some of these can be made out in Fig. 6.

CASE 18.—A male, aged 20 years. There was a two months' history. He had a general rupial eruption over the whole of the body resembling impetigo at parts. Scrapings from the bases of these lesions and fluid expressed from them failed to show the presence of spirochætæ pallida.

CASE 19.—A male, aged 22 years. There was a 13 months' history. Treatment had been irregular. There were perianal condylomata. Films were made from the condylomata but no spirochætæ pallidæ could be detected.

CASE 20.—The hard chancre of another male was examined and numerous spirochætæ pallidæ were discovered. No history of the case is now obtainable.

CASE 21.—A male, aged 28 years, suffering from tabes dorsalis. Symptoms began three months after infection with syphilis three years ago. Spinal fluid was removed by lumbar puncture. No spirochætæ were found. On cultivation, in one tube a pure culture of streptococci developed.

Of these 21 cases, two (8 and 12) were not syphilitic; another (21) was a case of tabes dorsalis three years after infection. Excluding these there are left 18 cases showing 25 lesions examined. Out of the 18 cases six showed the presence of undoubted spirochætæ pallida. In three others spirochætæ were found which could not with certainty be placed either with spirochætæ pallida or spirochætæ refringens. One case (7) was examined when I had little experience in looking for spirochætæ pallida. In one case (9) the possibilities are in favour of the bodies seen being spirochætæ pallidæ. In two cases (14 and 15) the lesions were drying up under treatment. The results were quite negative in the remaining five cases.

As regards the lesions, five hard chancres showed positive results; in two the results were doubtful and in three they were negative. Two non-ulcerated papules gave positive results; two dry papulo-squamous syphilides gave negative results, and two roseolar rashes also were negative. Four condylomata were examined; three were negative and one was doubtful. Four glands were examined and in none could undoubted spirochætæ pallidæ be found. One rupioid syphilide was examined with a negative result. Typical spirochætæ pallidæ were found only in hard chancres and in closed papules—i.e., in typical syphilitic lesions.

CONCLUSIONS.

It is astonishing with what unanimity this discovery has been accepted on the continent, an occurrence quite unprecedented in discoveries of similar importance, but there is much to support the relationship of spirochætæ pallida to syphilis. The most important facts in favour are its occurrence in non-ulcerated lesions, such as papules and buboes far away from the primary sore; its occurrence in the circulating blood and splenic blood in acquired syphilis, its occurrence specially in virulent infective lesions, and its absence from non-infective tertiary lesions; its presence in the depths of superficial lesions where it is stated to be unaccompanied by other organisms, and its definite localisation in the corium—if absolutely confirmed; its presence in congenitally syphilitic infants in great numbers and its occurrence—according to most observers—only in primary and secondary syphilitic lesions and in congenital syphilis—never in non-syphilitic diseases. Against it is its frequently scanty numbers, films in very many of the reported successful cases revealing the presence of only one or two spirochætæ, after repeated and prolonged search, the numbers thus frequently bearing no relationship to the severity of the tissue reactive changes, which is, as Siebert points out, without analogy in the domain of pathology; the possibility, which is by no means disproved, that various organisms may invade glands penetrating from a superficial ulcer; the difficulty of diagnosis in the case of the numerous intermediate forms which are found so commonly in such highly infective lesions as the mucous plaque, &c.; the claim, still strongly upheld by some, that forms indistinguishable from spirochætæ pallida are found in non-specific lesions. The last point, of course, even though it were granted, does not necessarily invalidate a causative relationship to syphilis.

In conclusion, one may say that while there is a very considerable probability that spirochætæ pallida bears an etiological relationship to syphilis we require to know more about spirochætæ in general and to have better methods of distinguishing the many forms intermediate between the typical spirochætæ pallida and the typical spirochætæ refringens before we can unreservedly accept this as a completely proved fact in pathology. One can say very little as yet with regard to the peculiar loop-like and rounded bodies found in syphilitic glands and to such bodies as the flagellated structure I have described in a film from a hard chancre.

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RUPTURE OF THE UTERUS WITH ESCAPE OF THE CHILD INTO THE ABDOMINAL CAVITY; DELIVERY PER VIAS NATURALES; RECOVERY.

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THE patient was a Hindu of a labouring caste, aged about 24 years, a well-built healthy woman, with a history of four previous normal labours. From such patients a correct detailed history can rarely be obtained of what has occurred before the arrival of skilled observation, but apparently in this case labour came on at full term about 11 P.M. on Nov. 27th, 1905, and the pains were ordinary and the case usual until about 2 or 3 A.M. on the 28th. About that hour the waters burst and bearing-down pains began. These lasted a very short time and after not more than four bearing-down pains the pain completely ceased and about ten minutes after the cessation the placenta was delivered. With the birth of the placenta there was very profuse bleeding and as this continued the friends took the woman to the hospital. No history of injury at any time could be elicited.

On admission to hospital at 7 A.M. on Nov. 28th the patient was pale and collapsed and the pulse at the wrist could not be felt. Her temperature, which was at first 97° F., rose in the evening to 101° 4°, and the pulse-rate was found to be 150 in the course of the day. She seemed

to be suffering some pain and there was extreme tenderness over the abdomen, palpation of which at once revealed the fact that the foetus seemed to be just under the abdominal wall. The placenta was lying outside the vagina attached to the cord. A hypodermic injection of strychnine, digitalin, and ergotin was given at once and the external genitals were thoroughly cleaned. Examination per vaginam was then made and a large irregular tear in the left posterior region of the uterus, and beginning apparently at the external os, was detected with the uterus firmly contracted behind the symphysis and the child in the abdominal cavity. A hot douche of sterilised normal saline solution was then given and the woman was put under chloroform. Examination then showed that the rent was large enough to allow the hand to pass freely into the abdominal cavity and to feel the child lying with the limbs near the rent.

The present-day opinion that the best treatment in such circumstances is laparotomy, cleaning of the abdominal cavity, and removal of the uterus, was borne in mind; but the collapsed condition of the patient was such that to have practised this, it was concluded, would inevitably have resulted in death. On the other hand, the natural passages were roomy and the tear was judged extensive enough to allow a normal child to pass with little further damage. At the same time it was remembered that, with no history of injury, abnormality in the child was almost certainly the cause of the rupture. The head of the child then was felt for and when it was reached the abnormality was found to be hydrocephalus. Perforation of the head and delivery per vias naturales were decided on. The feet were drawn together through the tear followed by the trunk with the upper limbs. The head, steadied over the tear by a hand in the vagina and two hands over the abdominal wall, was then pierced by a perforator. A rush of fluid followed and the child was easily delivered. After the delivery the abdominal cavity was thoroughly washed out with sterilised normal salt solution at a temperature of 100°. To do this a hand was passed in through the tear and the nozzle of the douche guided by it and with this hand in the abdominal cavity the abdominal contents were well washed. A piece of omentum which presented at the mouth of the vagina was replaced by the nozzle of the douche. Finally, a gauze drain was passed into the abdominal cavity through the tear, a pad was put on over the vagina, and a tight binder was applied.

The patient's condition was critical for the first two days, with a temperature rising to 103° 4° F. and a pulse-rate of about 150. The gauze drain was changed and a hot douche of sterilised saline solution was given twice a day and the patient was kept on ten minim doses of liquor strychnine hypodermically every four hours. On the morning of Nov. 30th her condition was much better and her temperature was 100°. The saline douche was replaced by an ical douche. On the evening of the same day her temperature rose to 101° and tympanites developed but rapidly yielded to turpentine stupes. On Dec. 1st her temperature was 99° 6° in the morning and 102° in the evening, the pulse-rate being about 120. On the 2nd diarrhoea supervened, remaining troublesome for two days but disappearing on treatment with five grains of Dover's powder and ten grains of subnitrate of bismuth every six hours. Her temperature was 99° 2° in the morning and 100° 2° in the evening. On the morning of the 3rd the temperature touched normal for the first time after delivery but there was still an evening rise—namely, to 99° 0° on the 3rd, 4th, and 5th; to 101° 0° on the 6th; to 99° 6° on the 7th; and to 99° 0° on the 8th. The temperature remained normal from the 9th and the progress of the case from that date was uneventful. The patient left hospital in good health on the 20th. She returned for examination on Jan. 10th, 1906, and the uterus was then found to be normal in size and position and the only remnant of the tear that could be detected was a laceration through the whole thickness of the cervix in the left posterior quadrant extending as far as the fornix.

As an interesting indication of the mental activities of the class to which the patient belonged it may be mentioned that when the child, which had a cleft palate and a double harelip, was seen by the relatives its deformities and its large head inspired them with awe and with the belief that it was a demon that had been delivered from the patient and the subsequent occurrence of tympanites caused great consternation as they believed that the demon had re-entered into possession of the mother.

Rae Barell, Oudh.

A SERIES OF FOUR CASES OF MULTIFORM STREPTOCOCCIC INFECTION APPARENTLY ALL DERIVED FROM THE SAME SOURCE.

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CASE 1.—A girl, aged ten years, came under the care of Mr. Brice on August 7th, 1905, and was found to be suffering from an ordinary mild attack of facial erysipelas. This had started on the right side of the nose and had gradually spread on to the forehead and scalp and down the left side of the face. The temperature was never very high and at the end of about 10 days the child was convalescent; the ordinary remedies usual in such a case were applied and there was never any anxiety as to the issue. The child was nursed by her mother who was throughout apparently in good health.

CASE 2.—On August 26th, 1905, Mr. Brice was asked to see the mother of the patient, Case 1, a woman about 35 years of age. She complained of great pain in the right shoulder which was found to be tender and swollen on its anterior aspect just below the clavicle but there was no redness of the skin nor any abrasion nor breach of surface. The temperature was a little raised and the pulse was somewhat increased in frequency. The patient was seen every day for the next four days, during which time the swelling about the shoulder developed into a red, acutely inflamed area of skin and subcutaneous tissue which rapidly spread down the right side of the chest and ultimately extended from the shoulder to the hip and from the nipple line in front to the spine behind. The temperature remained raised but was not very high, being usually about 102° F., the pulse-rate being about 120. On the 31st she was seen by Mr. Paton. She was then very delirious, attempting to get out of bed and proving very troublesome to feed. The extent of the inflammatory area was much as has been mentioned above: the parts inflamed were oedematous and brawny but there was no sign anywhere that there was any formation of pus, the swelling was only moderate in amount, and there was no tension of the skin. It was decided that the case was almost certainly one of streptococcic infection and arrangements were made for the injection of anti-streptococcic serum, while at the same time the local condition was treated with fomentations. It being late in the evening the serum was not obtained until the next day when ten cubic centimetres, prepared by Messrs. Parke, Davis and Co., were injected and the same again the following day. It proved difficult to give the injections as often as might have been desirable owing to the active delirium of the patient. The general condition, however, got steadily worse while the local signs somewhat increased, and on Sept. 3rd Mr. Paton again saw the patient, and though the swelling was still only moderate and there was practically no tension several incisions were made into the swollen area. Only a little serum and blood were let out, the tissues being found infiltrated with inflammatory products and on the way to become necrotic; there was no pus. A specimen of the blood was now sent to the Lister Institute and a report was received stating that a pure culture of a streptococcus had been obtained, and in view of this finding the injections of anti-streptococcic serum were still continued, 10 cubic centimetres being given on Sept. 3rd, 20 cubic centimetres on the 4th, and 10 cubic centimetres on the 6th. No amelioration followed any of the injections and the patient died on the 7th, 12 days from the onset of the disease. There was no necropsy.

CASE 3.—The patient in Case 2 had been nursed by her sister and a trained nurse and on the night before her death (Sept. 6th) her sister (the patient in the present

case, whose age was 38 years) began to feel ill and was obliged to lie up. Mr. Brice saw her and found her to have a rise of temperature to 102° F., and she was complaining of pain and tenderness in the right axilla, though there was little to be seen to account for her symptoms and no breach of surface could be found anywhere. Her general condition, however, became worse during the next two days and she was admitted into Westminster Hospital under the care of Mr. Paton on Sept. 8th. On admission the temperature was 104°, the pulse-rate was 120, and the patient appeared to be generally ill. There were no very definite physical signs save a little ill-defined swelling in the right axilla and over the right shoulder, which was rather painful on movement and tender to touch; the skin was not reddened, and no breach of surface could be found on the hand or arm, though she said that she had abraded one of her fingers a week before admission. The temperature fell on the next day to 102° but there was no change in the local condition. In view of the patient in Case 2 being the possible source of infection 10 cubic centimetres of anti-streptococcic serum were injected and a blood culture and blood count were made. The blood count showed a leucocytosis of 17,000 and a streptococcus was obtained in the culture, which, however, had become slightly contaminated. The injections of serum were repeated the next three days and the temperature gradually fell to 100°; the general condition also improved. Without the temperature again rising to more than 100°, however, the swelling in the axilla, after apparently inclining to disappear, began again to increase in size, and on Sept. 19th an incision was made evacuating a considerable quantity of pus which contained streptococci in pure culture. From this time the patient steadily improved, save that a small abscess formed in one of the glands at the base of the posterior triangle of the neck which was incised on Sept. 26th. She left the hospital well on Oct. 14th.

CASE 4.—The father of the patient mentioned in the first case, a man, aged 42 years, was admitted into St. George's Hospital on Oct. 3rd, 1905, under the care of Dr. Latham. He complained of soreness of the throat with some pain on swallowing. He gave no information of the cases just mentioned beyond stating that his wife had recently died with "something wrong in her side." The history of his own illness was as follows. On Sept. 28th he had had a slight rigor and on the next day he developed a sore-throat and felt so ill that he stayed in bed. On admission the patient was found to be anæmic; the voice was husky, the tongue was furred, and the teeth were good but very dirty. There was much injection of the pharynx and the soft palate, and the tonsils were acutely inflamed with small yellow patches scattered over them. The temperature was 101.5° F. and the pulse was 100. No other physical signs were observed. Calomel, potassium chlorate as a gargle, and a salicylate mixture were prescribed. On the following evening the temperature was normal but the condition of the throat showed no improvement. On the 5th the temperature rose to 104° and there was some delirium. On the 6th the patient's condition was worse, there was some cyanosis, the pulse-rate and respiration were increased, and there was pain at the epigastrium. Examination of the abdomen revealed nothing abnormal. A faint double murmur was heard over the cardiac area to the left of the sternum. The report of an examination of the blood made on the previous day showed the presence of a large number of streptococci. On the 7th the condition of the patient was worse and there was marked cardiac failure, with delirium. The murmur over the cardiac area was more marked. During the day the patient vomited several times and complained of some abdominal pain. The abdomen was distended but not tender or rigid; friction sounds were heard over its entire area. There was some diarrhoea. The cardiac weakness and delirium gradually increased and death took place early on the morning of the 8th. Free stimulation with alcohol and strychnine had been prescribed on the 5th and subsequent days; no serum treatment was employed as the condition of the patient was hopeless before streptococci had been found in the blood.

Post-mortem examination.—Severe suppurative tonsillitis, with acute pharyngitis. Acute inflammation of the larynx, a small open abscess on the left of the aryteno-epiglottidean fold, and an abscess in the right fold. Recent fibrinous pericarditis was found over the right auricle; the rest of the membrane was clear. The valves of the heart were healthy and the cavities were of normal size. There was some fibrosis of muscle. The aorta was atheromatous.

Severe purulent peritonitis was present, with pools of pus in the pelvis and between the liver and the stomach. The intestines were distended. In the liver, the spleen, the pancreas, and the kidneys there was cloudy swelling and the spleen was very swollen and grey.

Remarks—We have thought that the four cases above described are worth recording as a series, in which one form of streptococcus appears to have been the cause, but in which the nature of the illness produced was different in each case. This shows that though the form of the invading micro-organism may be the same in two cases it by no means follows that the type of infection or its virulence will be of the same nature as the source from which the infection was derived. Ordinary erysipelas is well known to be due to a streptococcus. In the above series of cases a streptococcus would no doubt have been found in the erysipelas case if it had been looked for. It is particularly interesting, however, to note that the other cases which there can be little doubt were infected from the case of erysipelas did not develop this disease, but in one case a virulent form of cellulitis, without suppuration, accompanied by general septicæmia, in a second case a local infection with suppuration, and in the third case an acute septicæmia with suppuration in the peritoneum, primary infection being apparently in the tonsils. There is, of course, another reasonable explanation of the source of infection in these cases—namely, that they were all due to defective sanitation in the house in which the patients lived.

A NOTE ON LOCAL ANÆSTHESIA FOR COSMETIC OPERATIONS.

By LOUIS E. STAMM, M.D. LOND., M.R.C.S. ENG.

MANY operations of the major class have now been successfully and painlessly performed under local anæsthesia by the hypodermic injection of eucaine and adrenalin solutions but it does not seem probable that this form of anæsthesia will supplant to any extent the use of general anæsthetics for operations of any magnitude, although it may continue to have a limited field of employment.

In the first place, it is much more satisfactory both for the surgeon and for the patient that the latter should be in a state of unconsciousness during the proceedings. An operation does not always proceed on absolutely smooth lines. Any sudden activity and bustling among the surgeons, assistants, or nurses as may occur on a severe hæmorrhage or other unexpected incident, or some discussion among the surgeons in the course of the operation as to alternative courses of procedure, would almost certainly arouse alarm and possibly mistrust in the mind of the patient—a thing which would be in itself highly undesirable, even if it had no direct deleterious effect. Then, again, with local anæsthesia it is essential that one should define accurately beforehand the region and tissues of the body that will be involved in the operation so as to render them anæsthetic, and this cannot always be done. It not infrequently happens, in abdominal operations for instance, that the incision first made must be considerably enlarged, or that even a second incision be made in a different region of the abdomen. On the other hand, in cases in which there are strong contra-indications against the administration of a general anæsthetic (serious heart or lung complications or an inveterate prejudice on the part of the patient to a general anæsthetic), and in which an operation is a question of life and death, local anæsthesia has already proved a valuable substitute.

The real sphere, however, of local anæsthesia lies in the operations of minor surgery and I am convinced that the profession has not yet fully realised its value and usefulness in this respect. The general practitioner has been described as the specialist in minor ailments and as such I am emboldened to say something about the efficacy of local anæsthesia in minor operations. By minor operations I mean especially operations involving only skin-deep incisions, such as the removal of sebaceous cysts, lipomata, fibromata, and as the removal of cutaneous or subcutaneous excrescences. It is a matter of surprise to me that in view of the facility with which these disfiguring marks can now be removed

people should be content to retain them as if they were a proud possession. One has only to pay a little attention to the matter to find that in any group of people in a public place quite a large proportion will present a wen or a wart or some other excrescence in a conspicuous part of their physiognomy to offend the eye of the beholder. It cannot be that they would not gladly part with such distinctions. It seems more reasonable to assume that they do not seek their removal, believing that they must either submit to a considerable amount of pain or go through all the paraphernalia involved in an operation, be it ever so small, under a general anæsthetic. There is now, however, the alternative course—namely, to have the excrescence removed under local anæsthesia. The procedure is so simple and the inconvenience so small that I can say from experience if the victims of these disfigurements were informed of this alternative by their medical advisers they would gladly submit to the operation and be grateful to them for it.

The technique of these small operations is very simple and may be described in a few words. It is only necessary to inject a few minims of the eucaine solution around the intended incisions, and therefore a much stronger solution can be used than is usually employed for more extensive operations. I have used solutions as strong as 4 per cent. If a minute quantity of active adrenalin be added a 1 per cent. eucaine solution is quite sufficient. My experiences with the various adrenalin preparations in the market have been very unsatisfactory and their addition to the eucaine solution has failed to have the desired effect of increasing the local anæsthesia of the eucaine. It seems that the adrenalin easily becomes inactive by rapid oxidation. This difficulty has now been overcome by making up 1 per cent. eucaine solution with a little active adrenalin in sealed tubes. It is prepared in this way by Parke, Davis, and Co. under the name of "eudrenine" and gives very satisfactory results. The skin of the part having been thoroughly cleansed and prepared, a few minims of this eudrenine solution are injected with an ordinary hypodermic syringe, previously sterilised, in two or three places around the intended incisions, care being taken to inject the solution in the course of the nerves of supply to the part. From 15 to 20 minutes should be given for the eucaine to have its full effect and the incisions may then be made and the operation carried out. A good nurse is all that is required as an assistant. A sealed dressing can usually be applied to the small wound and the patient is able to resume his usual avocation almost immediately afterwards.

Streatham, S.W.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Intracranial Tumour, with Special Reference to Ocular Symptoms.—An Improved Method of Performing the "Painocetic" Reaction in the Urine.

A MEETING of this society was held on March 13th, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Mr. ARTHUR W. ORMOND read a paper on 100 cases of Intracranial Tumour, with special reference to the ocular symptoms. The paper was based on abstracts of 100 cases of cerebral tumour taken consecutively from the reports of Guy's Hospital and was followed by a short review of the leading theories relating to the association of optic neuritis and cerebral tumour and finally Mr. Ormond's conclusions as to the causation of neuritis. These 100 cases had all been treated in the wards of Guy's Hospital and, with a few exceptions, post-mortem examinations had been made. In 70 of the cases optic neuritis was present; in 17 no note was made of the condition of the discs in the medical report; in five cases the optic nerve was directly pressed on and atrophy occurred without any preceding neuritis. Of the remaining cases two gave no clinical symptoms of cerebral tumour at all, two had very insufficient clinical account, and the remaining three were the only ones about which it was possible to maintain that no optic neuritis existed during the course of the illness. That the cases were so few in which optic neuritis

was absent suggested that optic neuritis existed as a rule in all cases of intracranial tumour. The neuritis in such cases might be caused either by irritation due to some chemical or bacteriological product in the blood or cerebro-spinal fluid, or by the effect of a general increase of pressure within the skull, which would produce an oedema of the optic nerve tissue at the optic disc. In most of these 100 cases increased intracranial pressure was present. Headache, fits, and vomiting were recorded as almost constant symptoms in the cases which were observed sufficiently long for a history to be obtained. In 37 cases the ventricles were partially or entirely dilated. In cerebellar tumours the existence of even a moderately sized growth would lead to some interference with the veins of Galen, or with the passage of fluid through the iter, and so a permanent or temporary increase of intra-ventricular pressure would be produced. On the other hand, the size of the tumour was sufficient in many cases to account for a general increase of pressure. The way in which a small tumour might produce a general increase of intracranial pressure was considered in the light of Leonard Hill's theory of increased intracranial pressure following traumatism, and also in connexion with the more recent work by W. B. Cannon.¹ Hill asserts that the brain tissue itself becomes oedematous. Owing to the obliteration of vessels in the immediate neighbourhood of the foreign body within the skull there would be an increase of pressure in the veins and capillaries, and, finally, an oedema. Cannon criticised Hill's conclusions and attributed the increased intracranial pressure to the excessive osmotic pressure present in brain tissue deprived of its proper blood-supply. Without pressing the association of increased intracranial pressure and optic neuritis too far, or, in other words, without assuming that they stand in the relationship of cause and effect, it may certainly be said that the existence of increased pressure within the skull definitely altered the ophthalmoscopic appearance of the disc. With the onset of acute symptoms of pathological pressure within the skull the neuritis did become increasingly marked. It was suggested that optic neuritis might be primarily due to some toxic or irritant product in the cerebro-spinal fluid which would produce at first an effect upon the vascular system whereby the central retinal vessels would be affected and a condition of optic disc congestion produced. This condition would lead to no organic change in the nerve nor to any loss of visual acuity unless increased intracranial pressure supervened; then papillitis would result and, if the nerve head became strangled, there would be a consequent atrophy. Mr. Ormond reviewed the principal "mechanical" and "inflammatory" theories and found an analogy between the changes recently shown as occurring in the posterior columns of the spinal cord in tabes dorsalis and the early changes in neuritis. He concluded that a hypothetical toxin would most satisfactorily explain all the experimental, pathological, and clinical facts known about optic neuritis in association with cerebral tumours, and concluded that optic neuritis was primarily produced by toxins due to the presence of a tumour within the brain and accentuated by the existence of increased intracranial pressure. Nystagmus was found in 14 cases, two being associated with tumours of the temporo-sphenoidal lobe. It was noticed that the condition of the pupils varied considerably, being dependent in the majority of the cases upon the state of the optic nerve. In the early stages the pupils were contracted, but as the neuritis increased and the conductivity of the nerve was depressed the pupils became dilated until atrophy having supervened they were widely dilated and fixed. The condition of the knee-jerks in the cerebral cases was normal in ten, absent in five, increased in eight, and diminished in one; in five cases they varied on the two sides. In the cerebellar cases the knee-jerks were found to be increased in some cases, absent in some, and in some normal. With regard to operative interference, brilliant results were obtained in one or two instances but in the majority of cases where an operation was undertaken the condition of the patient was not materially improved. A special note was made in reference to the duration of the illness, dating from the first well-marked symptom. In two instances the tumour gave no sign of its existence during the patient's life. In the other cases the period varied from a few hours to several years, but 56 of the cases died within six months or less from the onset of

the first symptom. In one case optic neuritis had been observed nine years previously, but no record could be obtained of the condition of the optic discs between that time and the three months previous to death. In 11 cases nothing could be determined as to the length of period, as the onset of the symptoms was so vague.—Dr. HOWARD H. TOOTH said that the cause of optic neuritis was a subject of extreme difficulty and he had never been able to come to any definite conclusion. In small tumours of the cerebellum marked optic neuritis might be present, whereas very large tumours might be present in the frontal lobes without giving any optic neuritis. He thought that if neuritis was due to a toxin, such as choline, then optic neuritis should occur in general paralysis of the insane; such was, however, most unusual.—Dr. A. T. WHITING said that Mr. Ormond had made out in his paper that neuritis occurred in all but 3 per cent. of cases. No authorities had given such a high percentage and Gowers and Allan Starr both gave 20 per cent. as the number in which neuritis was not found. In two out of three cases he had recently seen no neuritis had been present and in both at the necropsy large tumours were present in the cerebral hemispheres.—Dr. F. E. BATTEN alluded to the statement made in the paper that the degeneration of the posterior roots, which was present in cases of cerebral tumour, was due to a toxic process and asked if such were the case how Mr. Ormond explained the fact that it was the cervical roots which were commonly involved when, as in other conditions which were obviously due to toxic processes, it was usually the lumbar and sacral roots that were affected.—Dr. H. S. FRENCH pointed out that grave doubt had been thrown on the presence of choline in the blood as shown by the platinum chloride method and hence the observation of Mott and Halliburton could hardly be quoted in support of the view advocated by Mr. Ormond.—The PRESIDENT suggested that since the cerebral circulation was impeded it was not improbable that thrombosis might in some cases account for the neuritis. He was of opinion, however, that several factors were at work in the production of neuritis and no one cause would explain all cases.—Mr. ORMOND, in reply, said that he had tried to produce optic neuritis in rabbits by the injection of choline but without success.

Dr. P. J. CAMBRIDGE read a paper on an Improved Method of Performing the "Pancreatic" Reaction in the Urine. The method now described differed from that originally published in March, 1904, chiefly in the fact that the large amount of glycuronic acid present in the urine in most cases of pancreatic disease was removed by treatment with basic lead acetate, thus allowing a sugar, which appeared to be constantly obtainable in inflammatory conditions, to be more readily recognised. The test now depended upon a single preparation and not, as formerly, upon the comparative results of two. In a table were shown the results of the examination of 100 specimens of urine by the improved method. Of these 29 gave a positive result and 71 gave no reaction. The clinical reports on the cases from which the former were derived stated that there was evidence of pancreatic inflammation in all. The latter were obtained from patients suffering from conditions from which pancreatitis had to be diagnosed, and also included a number of normal and pathological urines employed as controls.—Mr. A. W. MAYO ROBSON said that he had operated on a large number of cases in which the pancreatic reaction had previously been done and he was convinced of the great aid which was afforded by this test. Criticisms had been made of the test on very imperfect knowledge of the method of performing it. The crystals had now been isolated in sufficient numbers to ascertain their melting point and their rotatory power. They were, in fact, a form of sugar. He had received the greatest help from this test in cases of involvement of the common duct, for if the pancreas was involved longer drainage was necessary. Inflammatory disease might be present in addition to malignant disease and hence the reaction might be present even in malignant disease. He mentioned the case of an old man in whom the test was of the greatest service. The man had deep jaundice suggestive of malignant disease. Analysis of the urine showed the presence of the pancreatic crystals. Gall-stones were found to be present and removed and the man made a perfect recovery. The urinary evidence was correct in a very large number of the cases in which it had been applied and the test was of the greatest value as an aid to diagnosis.

² Annales d'Hygiène Publique et de Médecine Légale, vol. xx., Paris, 1888.

confirmed by a number of other observers since. It was in the out-patient department of children's hospitals that this association was seen, for such children seldom survived the first year or two of life, and so it was seldom observed in asylums among Mongolian idiots who had passed the age of five years.—The PRESIDENT said that in his experience malformations were more frequent at the beginning or at the end of a series of pregnancies. For instance, he had met with congenital hip deformities and harelip deformities among the earlier births before the mother had got into the full swing of child-bearing, or later in life when pregnancies were too frequent and the intervals for recovery were insufficient.—Dr. GARROD remarked that the principle of heredity advanced by the President was somewhat novel and distinct from the Mendelian theories of heredity now current.

MEDICAL SOCIETY OF LONDON.

Clinical Features of Colitis.—Syphilis in Medical Practice.

A MEETING of this society was held on March 12th, Sir LAUDER BRUNTON, the President, being in the chair.

Dr. H. A. CALEY read a paper on the Clinical Features of Colitis. He commenced by pointing out that colitis in one or another of its several forms was far more common than was at present recognised, notwithstanding the increased attention which had been paid to the subject in recent years. Careful differentiation was the first essential but owing to the inadequacy of the pathological data available it was necessary to adopt an approximately accurate division into clinical types. Four principal types might be recognised:—1. Catarrhal or simple mucous colitis, which might be acute (primary or secondary) or chronic (irritative, atonic, or spastic). 2. Membranous or muco-membranous colitis. 3. Parietal colitis and pericolicitis (including sigmoiditis, pericolicitis sinistra, and perityphlitis). 4. Ulcerative, which might be—(a) endemic (e.g., tropical dysentery); (b) epidemic (e.g., "asylum dysentery"); or (c) sporadic, including primary and idiopathic and secondary varieties. Speaking of the characteristics of the several types Dr. Caley pointed out that in some cases the infection was chiefly confined to the colon, while in others it was part of a more general enteritis. Of chronic catarrhal colitis there were two principal forms—(1) those characterised by loose mucous evacuations or periodical diarrhoea and (2) cases characterised by constipation with excess of mucus in the dejecta (atonic and spastic types). This latter group was especially important in that it might merge insensibly into the membranous type. It was also important in relation to other intestinal disorders, notably atonic dilatation of the colon, appendicitis, and enterospasm. In relation to appendicitis chronic colitis was important as an antecedent, constituting the connecting link between chronic constipation and the appendicitis which ultimately developed. It was also a stimulator of appendicitis, especially of the chronic type of the latter, with which it was not uncommonly associated. Acute attacks of enterospasm might also be referable to simple catarrhal colitis, though more commonly to the muco-membranous type, masses of mucus, with or without fecal concretions, setting up irregular peristalsis which resulted in acute enterospasm. The clinical characteristics of membranous colitis were then discussed and in connexion with its etiology facts were adduced to emphasise the importance of chronic constipation, the "arthritic" factor, and its close connexion with neurasthenic states. With reference to the clinical associations of membranous colitis stress was laid upon the liability to acute paroxysms of pain in addition to local symptoms of a more persistent kind. Parietal colitis and pericolicitis were next referred to. The distinctive pathological feature of pericolicitis was the spread of the infection through the sub-mucous and muscular coats, thus involving the peritoneum and producing pain, tenderness, muscular rigidity, and induration as a result of the local peritonitis. If on the left side this condition was known as pericolicitis sinistra; if in the region of the caecum as perityphlitis in the strict sense as distinct from appendicitis. To avoid confusion the term pericolicitis dextra was perhaps preferable. On account of its direct results pericolicitis was important in relation to the differential diagnosis of obscure abdominal lesions. The characteristics of ulcerative colitis were briefly mentioned and Dr. Caley laid stress upon anomalous cases of this type. In this, as in all forms of colitis, for

accurate diagnosis critical scrutiny of the symptoms, systematic investigation of the dejecta, and careful physical examination of the colon were indispensable.—Dr. T. D. SAVILL, referring to the difficulty of diagnosis in the earlier phases of colitis, drew attention to the intimate relation of this disease to neurasthenia and various nervous disorders. He had recently made an analysis from an etiological standpoint of 103 private cases which came under treatment for neurasthenia and no less than 40 per cent. of these had been due to antecedent incipient colitis and allied gastro-intestinal derangements. There could be no doubt that the bowel trouble was the antecedent and causal condition of the nervous symptoms, for the latter yielded to treatment directed to the former. It was in the earlier phases when nervous symptoms were met with, not in the later, and that was why some bath-physicians doubted their constant presence.—Mr. F. SWINFORD EDWARDS asked whether Dr. Caley had examined any of his cases with the sigmoidoscope and proctoscope, by which means the mucous membrane of the sigmoid flexure and rectum could be seen very well and applications could be made. He referred to a case of enterospasm of the colon causing obstruction, for which inguinal colotomy had been performed. For the treatment of colitis he advocated large enemata of various antiseptic solutions which in his experience were uniformly successful.—Dr. F. J. PORYTON doubted the wisdom of employing large enemata in cases where ulceration was suspected. He emphasised the relation of appendicitis to antecedent colitis and referred to three cases in children. He asked whether Dr. Caley had met with atony of the colon as a cause of tetany in childhood. Large and repeated doses of magnesium sulphate were, in his opinion, of great value in the treatment of colitis.—Dr. F. DE HAVILLAND HALL had always been struck by the close resemblance between colitis and the conditions described by Dr. Eustace Smith as "mucous disease in children." Discussing the treatment he advocated careful feeding, hot fomentations to the abdomen, and in suitable cases copious enemata of weak boric acid. He suggested the use of the term pancolitis in place of parietal colitis.—Dr. CALEY replied.

Dr. J. J. PERKINS read a paper on Syphilis in Medical Practice. He commenced by saying that surgical syphilitic diseases and parasyphilitic affections (which were consequences rather than direct results of the disease) would be excluded and he would confine his attention to congenital syphilitic manifestations and such results of the acquired disease as were amenable to antisyphilitic medicinal treatment. The late date at which congenital lesions might appear (as late as middle life or even later) was insisted on. Fournier had recorded cases as late as 60 years. In discussing the diagnosis special stress was laid on the necessity of a thorough search for other signs of specific disease, and in this connexion the importance of the Argyll-Robertson pupil as a sign of syphilis was insisted on. Though no doubt due to cerebral syphilis, Dr. Perkins thought that it could be met with alone and apart from any general or progressive nervous disease. Passing on to the lesions of the different organs in detail, Dr. Perkins laid stress on the frequency of arterial thrombosis as a cause of nervous symptoms and on syphilis as a cause of neuralgia and other signs of nerve pressure. Syphilis might give rise to high fever, promptly amenable to specific remedies and to them alone. A series of cases in which gummata formed large abdominal tumours, liable to be mistaken for malignant growths, was narrated. Dr. Perkins believed that he had seen amyloid disease of the kidney disappear under appropriate treatment.—Dr. SAVILL recalled the fact that it was Lancereux who had first described the occurrence of intermitting pyrexia both in the earlier and later stages of syphilis and that this had since been emphasised by the observations of the late Dr. J. S. Bristowe and the late Dr. Charles Murchison.—Dr. CHARLES W. CHAPMAN, referring to the question of history of primary lesion as an aid to diagnosis, emphasised the value of inquiring whether the patient had had a small itching sore of the penis.—Mr. G. PERNET drew attention to the fallacies of diagnosis in congenital syphilis, which might resemble that acquired in early childhood. In the acquired disease, also, he was not in the habit of placing much reliance on the history of the primary lesion either in men or women. Leucoplakia on the tongue was a valuable aid to diagnosis but it was also present in lichen planus and in the tongues of great smokers. Iodide of potassium, which relieved other diseases also, was not a specific for syphilis without mercury, which was the only true curative agent in syphilis.—Dr.

The PRESIDENT exhibited and described a Scotometer for the Diagnosis of Glaucoma and other purposes.

EDINBURGH MEDICO-CHIRURGICAL
SOCIETY.

Exhibition of Patients.—*Spasm of the Retinal Artery.*—*Vaccine Treatment in Surgery.*—*Occupation Mortalities.*

A MEETING of this society was held on March 7th, Dr. J. O. APFLECK, the President, being in the chair.

Dr. T. C. MACKENZIE showed a lad, aged 16 years, whose condition was suggestive of General Paralysis. His history was briefly as follows. He was born at full term and was the seventh child in a family of 11. At nine months he developed rickets and was five years old before he could walk. He had always been a dull child. At the age of eight years he began to suffer from pain on the left side of the head which passed off after a time. He had had several "fainting turns" in the street and at home. These were of the nature of congestive seizures; they left the lad dull for a long time afterwards and, moreover, affected his speech. For the last few weeks he had been behaving strangely, had lost his memory, and his mind had wandered. His mental condition was now dull and confused, though he had grandiose ideas. His muscular power was feeble and on walking he soon became exhausted. Romberg's sign was slightly developed. There was no history of specific disease.

Dr. EDWIN BRAMWELL exhibited: (1) Two Cases of Non-progressive Hemiplegia, in both of which an intracranial tumour was diagnosed as the probable lesion; and (2) a Case of Syringomyelia with Scapulo-humeral Arthropathy.

Dr. R. A. LUNDIE read a paper on a case of Transient Blindness due to Spasm of the Retinal Artery. He said that though such cases were probably not uncommon there were not many where the fundus oculi had been examined during the attack. He had met with records of several similar cases in which great contraction of the retinal artery, extending all over the fundus, had been observed. The only other case (with the exception of one described by Raynaud) in which localised transient spasm of the arteries occurred was described by Benson in 1894. In this case the patient suffered from transient loss of vision, sometimes of the whole eye, but more often of only part of the field of vision. The eye was examined on three occasions during an attack and on each occasion the portion of the retinal artery corresponding to the blind area was found to be empty but it soon refilled. Dr. Lundie's case occurred in a feeble man aged 88 years who suddenly lost the sight of his left eye. He was seen before the attack passed off, when the upper part of the field had regained some sight but not the lower. On ophthalmic examination it was found that the vessels were normal except the upper main branch of the retinal artery. In this there was an interruption of the column of blood in a section of the vessel slightly less in length than one diameter of the disc. In a few minutes a fine thread of blood appeared in this portion and within an hour of the onset vision was restored and the appearance of the artery became normal. The whole duration of the attack was under one hour. The only explanation of the case was that of localised spasm of the artery. No embolism or thrombosis could have passed away so completely in so short a time and the appearances were not those found in stasis. No doubt the spasm had affected either the trunk or all its branches at the onset of the attack. Spasm of three different types had been described. In most of the cases there was contraction of the whole retinal artery. In Benson's case the small empty portion passed along by a kind of peristaltic movement and refilled suddenly. In the last type the contraction affected a limited portion of the artery which remained stationary and refilled gradually as in Dr. Lundie's own case. The doubt thrown by such cases on the diagnosis of embolism of the retinal artery when sudden blindness occurred with contraction of that vessel was emphasized. If it were realised that spasm, not embolism, might be the cause of such attacks eyes that would otherwise be hopelessly damaged

might be saved. Another case was described occurring in a woman aged 22 years, otherwise healthy, who had numerous slight transient attacks of loss of sight. After one of these a sector-shaped defect of the field remained and the corresponding part of the fundus showed at the time oedema of the retina, and four years later great contraction of the branch of the retinal artery. The appearance observed at the time of the attack and the present condition of the fundus showed that the loss of sight was due to a lesion of the retinal artery. It was concluded that the attacks being transient had been due to spasm of the artery which persisted too long for the integrity of the part of the retina affected. Each attack was ushered in by vertical diplopia, "one side of things looking higher than the other," which was as transient as the blindness, always preceded it and even seemed to have occurred without being followed by loss of sight. This pointed to an associated spasm of the artery supplying some part of the extrinsic ocular muscles or their nervous connexions. The damage to vision which had occurred in this case was instructive and illustrated that these transient amblyopias of vascular origin, however trifling they might appear, were extremely likely to lead to permanent impairment of vision.—Dr. W. G. SYM, Dr. JAMES RITCHIE, Dr. D. M. C. CHURCH, and the PRESIDENT took part in the discussion which followed.

Dr. H. M. W. GRAY and Dr. G. M. DUNCAN (Aberdeen) communicated a paper on Vaccine Treatment in Surgery (which we hope to publish shortly).—In the discussion which followed Mr. H. J. STILES said that he had tried treatment by tuberculin at the Royal Hospital for Sick Children, Edinburgh, where there was a wealth of suitable material, and he was not so optimistic as Dr. Gray. In the very large number of tuberculous cases which had come under his observation he had had many surprises; cases thought to be incurable had recovered marvellously. He recalled one case of most advanced hip-joint disease which in his opinion was incurable and yet one year after this verdict the joint had healed perfectly. He thought that early cases of tuberculous disease should be treated by injections of tuberculin but he would hardly go so far as to say that splints were unnecessary. He believed that splints, dieting, and fresh air were most valuable aids. If too much faith were placed in the use of injections the result might be to cause so much delay that ultimately the operation might not be so satisfactory as it might have been if done earlier.—Dr. DAVID LAWSON (Nordrach-on-Dee) said that in his experience clinical symptoms were not sufficient to indicate the dosage of tuberculin. It required careful laboratory work to give correct information as to the dosage. His tendency in practice was now rather to diminish than to increase the dose.

Dr. J. C. DUNLOP read a paper on Occupation Mortalities. His remarks were based on a recent study of the occupation mortalities in Scotland, published in the Decennial Supplement to the Forty-eighth Detailed Annual Report of the Registrar-General for Scotland. He divided the occupations into six classes, according to whether the death-rates in the two more important age periods (25 to 45 and 45 to 65) were greater, less, or not decidedly different from the corresponding death-rates of all males. Class 1 was characterised by low death-rates in both age-periods: in it were included ministers, clergymen, priests, farmers, graziers, agricultural labourers, and farm servants. Class 2 was characterised by a low death-rate in one age-period and a death-rate in the other age-period not decidedly different from that of all males. Class 3 was characterised by a death-rate in both age-periods not decidedly different from those of all males. In it were included physicians, surgeons, dentists, and milksters. Class 4 was characterised by a high death-rate in one age-period and a low one in the other age-period. Class 5 was characterised by a high death-rate in one age-period and one not decidedly different from that of all males in the other age-period. Class 6 was characterised by a high death-rate in both age-periods.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—

A meeting of the Section of Pathology was held on Feb. 16th, Sir Thornley Stoker, President of the Academy, being in the chair.—The proceedings consisted of a discussion on Abdominal and Pelvic Tuberculosis.—Dr. James Little described the symptomatology and treatment of tuberculous disease as it affected the peritoneum, the intestines, and the mesenteric glands.—Sir William J. Smyly

said that the study of tuberculosis of the female genitals during life had only been possible since the curette and abdominal section had come into vogue. The Fallopian tubes were the organs most frequently affected; the uterus was affected fairly often but other parts rarely. The possibility of infection through the spermatic fluid and also the infection of the foetus by its mother were interesting questions. The difficulties attending diagnosis were so great that until the parts had been examined by the microscope it could rarely be attained with certainty. Neither the shape of the tumours or the thickening of the uterine end of the tube, to which so much importance had been attached by Hegar, nor the nodules on the folds of Douglas were peculiar to this disease. As regards treatment, the removal of the diseased organs was a difficult and dangerous operation which not infrequently left the unfortunate patients with incurable fistula.—Professor E. J. McWeeney, speaking with regard to the urine in cases of genito-urinary tubercle, said that he found tubercle bacilli without difficulty in about 90 per cent. of purulent urines with a distinctly acid reaction. The tubercle bacilli were usually agglutinated owing to the saline concentration of the urine and accompanied by polymuclear pus cells, owing, no doubt, to liberation of their proteins by osmosis or plasmolysis. Dealing next with the hypertrophic variety of tuberculosis of the ileo-colic region of the bowel he emphasised its resemblance to cancer and its manifold differences from the ordinary tuberculous ulceration met with in consumptives who swallowed their sputum. He suggested that it might be due to ingestion of bovine bacilli. Finally, he observed that the intestinal origin of pulmonary consumption suggested by Behring had been confirmed by Calmette of Lille and his pupils who found that pigment ingested by adult animals found its way at once to the lungs, whilst in young animals it was at first stopped in the mesenteric glands. Calmette had, moreover, succeeded in producing pulmonary tuberculosis, without lesion of the gastro-intestinal mucosa or of the mesenteric glands, by introducing a suspension of tubercle bacilli into the rumen of adult goats. These results, if confirmed, together with the disproof of Koch's assertion that bovine bacilli were innocuous for the human race should act as a warning against the dangers of infected ingesta.—Mr. T. E. Gordon read an account of a case of chronic abscess successfully treated by tuberculin. He also related the case of an old man for whom he had short-circuited a portion of the ileum with temporary success. Some months later the man returned to hospital with fresh obstruction and died. At the necropsy no less than five different tuberculous masses were found in different parts of the small intestine. It seemed clear that tuberculin treatment could never replace surgery in cases of this type.—Professor Arthur H. White dealt with Professor A. E. Wright's recent work and stated that the good effect of operations in certain cases of tuberculous peritonitis depended mainly on two factors—the first being the replacing of a fluid containing little or no protective substances by a fresh fluid containing a much larger amount, and the second being the rise in the opsonic index due to auto-inoculation which resulted from operation. He also demonstrated a fall in the opsonic index in four cases of tuberculous peritonitis which had relapsed, and in the only case which he had examined where the patient remained well the opsonic index was above normal.—Dr. Alfred R. Parsons, Dr. James B. Coleman, Dr. Richard D. Purdon, the President of the Academy, and others also took part in the discussion.—A meeting of the Section of Surgery was held on Feb. 23rd, Mr. E. E. L. G. Gunn being in the chair.—Mr. D. Kennedy read a paper on Appendicitis. He strongly advocated operation in the course of the disease as being calculated to shorten the illness and to reduce the mortality. He gave a brief history of eight cases, out of a series of 43, upon which he had operated during the acute stage without a death. The dangers of operating during an acute attack, he believed, were greatly exaggerated. Unless complications were present appendicectomy was as safe during the attack as in the quiescent period. The ideal operation was removal of the offending structure. If pus were present free drainage should be provided. Mr. Kennedy condemned indiscriminate douching and rough spicing of the peritoneum. The diagnosis of the disease was frequently difficult in children and a proper examination could only be made in these cases by the aid of an anaesthetic. In all cases he recommended a rectal examination and in females a vaginal examination when possible for diagnostic purposes—

Mr. Gunn referred to the importance of a leucocyte count in coming to a diagnosis and recommended the employment of palliative measures before urging operation.—Mr. A. B. Mitchell alluded to the difficulty sometimes experienced in diagnosing appendicitis in an early stage. He had seen the condition confounded with perforation of a duodenal ulcer. He thought it was advisable to remove the appendix in suppurative cases, and also at a very early period if the disease was diagnosed with certainty. Failure to remove the appendix might lead to recurrence with abscess formation.—Dr. M. B. Savage mentioned some facts illustrating the connexion between appendicitis and suppuration elsewhere in the body. In one case he thought that an attack of appendicitis had followed upon follicular tonsillitis ending in suppuration.—Mr. Mitchell read a paper on Excision of the Scapula for Neoplasm. The patient was exhibited and demonstrated the range of movement and the functional capacity of the limb.—The communication was discussed by Sir Thomas Myles, Mr. Kennedy, Dr. H. M. Johnston, and Mr. H. B. Goulding.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—

A meeting of this society was held on March 9th, Sir Shirley F. Murphy, the President, being in the chair.—Dr. Philip Boobbyer (Nottingham) read a paper on Some Defects in the Machinery of Sanitary Administration. Beginning with the Local Government Board he urged that the absence of any medical member was a defect, and pointed out that an expert member of a board could press his views with a weight that no official, however eminent, could, his function being merely to advise; and he ridiculed the notion that an expert, whether a military, naval, or medical officer, would be more inclined to faddism or extreme measures than a layman, while the latter would be more likely to make costly mistakes. He paid a high compliment to the expert medical inspectors of the Local Government Board but maintained that a larger proportion ought to be selected from among medical officers of health who would bring a knowledge of practical administrative work. He suggested the cooption on to rural sanitary authorities, on which there were frequently no men possessing any experience or qualifications for the control of the public health, of one or more medical officers of health of neighbouring districts—a practice which had been found to work well in the case of the education authorities who often coopted educational experts. He deprecated half-time appointments in the interest alike of the medical officers and of the districts which they served; they were hampered by their practice and the sanitary administration tended to devolve entirely on the inspectors who, even if competent in their own duties, had no conception of public health beyond the details of house sanitation. Indeed, the public believed in the invariable connexion of diphtheria and typhoid fever with bad drains. He pleaded for the better education of inspectors, not only theoretical but practical, by a system of assistants or apprenticeship, while he thought that the post of chief inspector in large towns might with advantage be held by a D.P.H. aspiring to the position of a medical officer of health. He claimed for the medical officer of health the same control and absolute responsibility for all that related to the public health as were accorded the engineer in his department. The medical officer, although a man of science, should be also a man of business and an administrator, not a mere figure-head or even a consultant only. Turning to public health legislation, Dr. Boobbyer pointed to a few instances, typical of many more, of clauses in Public Health Acts which were so absurd or unworkable that they were evidently drafted by persons wholly ignorant of the matter in question. Why should not our municipalities have the like power with those of Germany not only for improving the actual housing conditions but of large acquisitions of land and a control of the lines of development of the city for many years to come which had worked so admirably in, e.g., Düsseldorf and Ulm?—Dr. W. Butler (Willesden) would go farther than Dr. Boobbyer in his demand for the independence and authority of the medical officer of health which should extend over the whole field of State medicine. Vaccination was an important branch of preventive medicine, but had passed into the hands of the guardians along with Poor-law medical relief. The supervision of the health conditions of schools and the registration of births and deaths were in lay hands, though distinctly in the

province of the medical officer of health, whose subordinates the registrars should be, that he might have the earliest information. Quite recently he found when too late that two deaths certified as rickets were some of an outbreak of ptomaine poisoning from sausages.—Dr. A. Newsholme (Brighton) maintained that the influence exerted by a medical officer of health depended on himself and doubted if sanitary efficiency would be attained by making him an autocrat. Nor would anything be gained by changing the name of President of the Local Government Board into that of Minister of Health. An expert was not always a good administrator and a lay head relied on the advice and judgment of an expert subordinate. In all Government offices it was the permanent officials who controlled and gave continuity to the administration.—Dr. H. Meredith Richards (Croydon) by employing as workmen aspirants for the inspectorate provided a form of apprenticeship. He urged more combination of rural districts, mentioning cases of adjoining areas which together might have carried out water or sewerage schemes but where through local and topographical conditions neither could do so alone.—Dr. J. S. Tew, Dr. E. F. Willoughby, Dr. J. W. Hembrough, Mr. Herbert Jones, and the President having spoken, Dr. Boobbyer replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—

A meeting of this society was held on March 7th, Mr. T. J. Dabell, the President, being in the chair.—On the motion of Mr. W. Tibbles, seconded by Mr. W. Morley Willis, it was decided to call a special meeting to consider the indiscriminate mode of distributing letters of recommendation to the General Hospital and other medical charities and whether a remedy could be suggested to check the growing abuse of these charities.—Mr. Willis showed a girl, aged four and a half years, from whom he had a month previously removed the right kidney for sarcoma, the tumour being as big as a child's head at birth. Hæmaturia occurred once before admission and a few pus cells were found in the urine. The temperature ranged from 99° to 100° F. The swelling was not particularly tender and when the kidney was exposed by an abdominal incision its consistency was soft enough to give typical fluctuation. The absence of tenderness made an inflammatory affection improbable and the dilated veins seen on the surface of the tumour when exposed were suggestive of the true nature of the case.—Dr. Reed showed a child, aged 14 months, the subject of Infantile Scurvy. There had been bleeding from the gums and the lower limbs were held in a stiff, awkward position, apparently pointing to hæmorrhage into each hip-joint. With the exception of a short period of some patent food, the child had been fed since birth on milk which had been boiled for five minutes and not on anything else. Fresh milk and lemon juice set up a striking improvement and the excruciating pain was greatly bettered within 12 hours of the commencement of treatment.—Dr. W. B. Ransom and Dr. F. H. Jacob discussed this case.—Dr. Jacob showed a child (the subject of a previous communication) in whom a Nevus had been successfully cured by Radium.—Dr. Ransom read a paper on Infantileism or persistence of childish characteristics. After a survey of the many causes held to be contributory to such a condition, such as cretinism, congenital syphilis, hydrocephalus, congenital heart disease, tuberculosis, mongolianism, imperfect sexual development, tuberculous deficiency, muscular dystrophy, Raynaud's disease, achondroplasia and normal infantileism, the classification adopted by Mr. Hastings Gilford of Reading was traced out and the characteristics of each class were pointed out and illustrated. Examples of the conditions named ateleiosis and progeria were also shown. Of special interest was the case of a female, aged 27 years, who died recently from diabetic coma in the Nottingham General Hospital ten days after admission. She was 4 feet 3 inches in height but only weighed 3 stones 8 pounds. She was backward when at school and was said to have suffered from headaches and chronic diarrhoea. There was no history of syphilis or alcoholism and she had never menstruated. The abdomen was prominent, the gluteal muscles were undeveloped, the pelvis and thighs approximating to the male type, and latterly the bowels were constipated; the faces were not fatty. Patches of atheroma were found in the aorta, while the pancreas, the spleen, and the mesenteric gland showed a slight degree of senile cirrhosis. The thyroid body was normal, the thymus was absent, and the pituitary body was normal. The pancreas was thin

and tapelike, weighing less than one ounce. The suprarenals showed some cell-vacuolation as of fatty degeneration. The uterus was so little developed that its cavity would only admit a pin and no ovaries or testes could be found. No cause of the condition of infantilism or ateleiosis was discovered, unless the absence of the sexual glands could be considered such.—Dr. Jacob showed photographs of cretins before and after treatment with thyroid substance and pointed out the extraordinary improvement which might follow such treatment, both in intelligence and physical stature.—Dr. Ransom showed specimens of Malignant Adenoma of the Suprarenal Capsule (hypernephroma of Ziegler) and read notes of the case. The patient was a man, aged 68 years, and the most prominent symptom was intermittent hæmaturia. A large swelling could be felt in the region of the left kidney, and after the bladder had been opened and washed free of clots this was removed by Mr. Anderson. Microscopically the tumour showed marked vacuolation of the glandular cells, as though loaded with fat, and it invaded both the renal structure and the surrounding fat.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held at Birmingham on Feb. 28th, Mr. J. Quirke, the President, being in the chair.—Mr. C. A. Leedham-Green showed a young girl for whom, by means of an Extensive Plastic Operation, he had been able to conserve a useful arm after it had sustained a compound comminuted fracture of the elbow-joint and thereby lost a zone of skin some six inches in width.—Dr. James Sawyer showed a specimen of Cicatricial Contraction of the Stomach taken from a man, aged 44 years. The œsophagus was normal except for a slight dilatation with ulceration at the lower end. The stomach was two and a half inches in length, with a lumen at no part more than a quarter of an inch in diameter and with walls about half an inch in thickness. The duodenum below was dilated and an opening had been made into it by operation in order to relieve the starvation from which the man was dying. For the last five years the patient had suffered from pain and vomiting after taking food and seven weeks before death he attempted to commit suicide by taking soldering fluid. The taking of this corrosive fluid did not seem to have affected him much as he was only slightly collapsed and had very little vomiting at the time. He went out of hospital, able to swallow solid food, 18 days after taking the poison. It was thought that the condition could not be entirely due to the cicatricial contraction of the stomach as a result of the poison, but that there must have been either a congenital deficiency of the stomach or a contraction from some cause not ascertained and that the poison was sufficient to cause further diminution in the lumen of the stomach. Microscopically there was no mucous membrane present and the stomach was composed of cicatricial tissue. There was nothing to suggest that the condition was that of a scirrhus carcinoma.—Dr. Charles E. Pearslow showed a Dermoid Cyst of the Ovary containing hair, teeth, and bone. It was removed from a patient who was in the last week of her second pregnancy and had complained of abdominal pain, vomiting, and trouble with micturition for three months. A tumour of the size of a fetal head was found impacted in the pelvis. Cæsarean section was performed and a living child was extracted, then the tumour was removed, and lastly the uterine and abdominal wounds were sutured. The child was weakly and died the same day. The mother made an uninterrupted recovery. In opening the uterus Dr. Pearslow first made a small incision down to the membranes and then inserted both fore-fingers and tore the wound to the required extent. This saved time and lessened hæmorrhage. The resulting wound presented no difficulty in suturing.—Mr. George Heaton showed two specimens of Goitre removed under Local Anæsthesia. The method adopted in each case was that advocated by Mr. A. E. J. Barker. The solution was injected into the operation area and towards the anterior divisions of the cervical nerves. The anæsthesia was complete in half an hour and lasted for another hour. The first specimen was the right lobe and isthmus of a parenchymatous goitre which had been in existence for 14 years and paralysis of the right vocal cord, which was associated with minutes and the patient made a good recovery. The second specimen was a similar one from a patient 42 years of age. There was much narrowing of the trachea, but the operation and result were as satisfactory as in the first case.—Mr. A. J.

Fairlie-Clarke demonstrated Mr. Barker's apparatus and explained its use.—Mr. J. Jameson Evans showed a boy, aged seven years, who suffered from Hereditary Nystagmus. The vertical movements of the eyes were defective and the choroidal pigment was deficient. The hair, although rather light, was not albinotic but was said to have been formerly lighter in colour. His grandfather and all the male members of the two succeeding generations suffered in the same way but none of the female members.—Dr. J. G. Emanuel showed two cases of Multiple Exostoses occurring in a Brother and Sister.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 8th, Mr. F. Bowmen Jessett, the President, being in the chair.—Dr. J. H. Jellett showed a specimen of Advanced Carcinoma of Both Ovaries removed from a patient, aged 40 years, who complained of paroxysmal attacks of pain, associated with a swelling in the abdomen which had been gradually increasing for the previous eight months. The patient had been married four years; the periods had been regular, lasting four days, but were accompanied with pain. The lower abdomen and pelvis were occupied by a hard, irregular mass which was densely adherent below. On making an exploratory incision the tumour was found to consist of two separate parts, with the uterus between. The lateral tumours occupied the site of the ovaries and appeared like cysts. There was an abscess closely connected with the uterus and the broad ligaments were extensively infiltrated as well as the rectum. The uterus and tumours were removed and the pelvis was drained through the vagina with iodoform gauze. Four months later the patient returned with three small abscesses along the line of the abdominal incision. The rectum was surrounded by a hard mass. The patient had increased in weight and appeared to be well. The solid growth consisted of carcinoma of irregular-cell type.—Dr. Jellett also showed a specimen of Double Pyosalpinx with an extra-uterine foetus of four months pregnancy removed from a patient, aged 27 years, who complained of bleeding during coitus and pain in the lower part of the abdomen. There were no children but the patient had a miscarriage at about the twentieth week, 18 months previously. On opening the abdomen the omentum was found to be thickened and adherent to the Fallopian tubes. The right tube was enlarged to the size of a sausage, firmly adherent to the ovary, and distended with pus. The skeleton of a four months foetus projected from the ampulla on the same side. The left tube was of the size of a finger and contained pus, while the ovary was cystic. Both tubes and ovaries were removed. The uterus was fixed to the anterior abdominal wall after Kelly's method.—Dr. M. A. D. Scharlieb showed an Enlarged Uterus removed from a patient, aged 50 years, who complained of weakness, vaginal discharge, frequency of micturition with scalding, and constipation. There were nine children, the youngest 16 years of age. The periods were regular until 11 months previously. A large, irregular, hard tumour was found in the abdomen. The cervix was irregular and a papillomatous mass protruded through the os uteri. The uterus and appendages were removed at the operation, the latter being healthy, while the former was enlarged to the size of a four months pregnancy. The uterine cavity was occupied by a growth mainly attached to the anterior wall. On microscopic examination this proved to be an endothelioma and in portions presented the appearances of perithelioma.—Dr. Jellett read notes of Two Rare Conditions met with in the Pelvis during Operation. During the course of salpingectomy the sigmoid flexure was found to be deviated to the right, while from the lower border a tubular structure about three inches long and half an inch wide passed into the recto-uterine pouch, where it was adherent. The second condition was found during the removal of a cystic ovary from a patient who had been tapped several times for ascites. On examining the left side of the pelvis adhesions were found between the uterus and intestines; on separating these for the purpose of examining the appendages the left ovary was absent and the Fallopian tube represented by a stump about half an inch in length with a correspondingly diminished broad ligament. There was no history of any previous pelvic operation.

LIVERPOOL MEDICAL INSTITUTION.—A pathological meeting of this society was held on March 8th, Dr. J. Hill Abram, Vice-President, being in the chair.—After the exhibition of card specimens Dr. T. R. Bradshaw read a note

on the Recognition of Myelopathic Albumose in the Urine and demonstrated the chief clinical tests. He laid special stress on the determination of the coagulation point and on the hydrochloric acid test, pointing out the uselessness of many of the tests frequently employed, such as the biuret reaction and Boston's test with lead acetate.—Dr. Ernest E. Glynn described the site of hæmorrhage in 12 cases of fatal Hæmatemesis. In seven the bleeding came from the œsophagus, four being secondary to hepatic cirrhosis. In three the hæmorrhage originated in the stomach, two from ordinary gastric ulcers, and one from three minute gastric erosions. In two instances no lesion whatever was discovered in the stomach, œsophagus, or intestines, though the organs were removed a few hours after death and most carefully examined. He suggested that the hæmorrhage might have arisen from the posterior naso-pharynx. A fatal case of Acute Hæmorrhagic Cystitis was also described, the blood forcing its way into the pelves of both kidneys.—Dr. K. A. Grossmann read a paper on Congenital Anophthalmos and Orbital Cyst. Of five cases of congenital anophthalmos seen by him three had been shown before the society, one with monolateral and the other two with double anophthalmos. In four patients altogether an orbital cyst was present monolaterally. The eyelids were well formed in all the cases, though the palpebral fissure was small; the conjunctiva formed a small and shallow funnel corresponding to an equally small orbit in which no trace of an eyeball could be seen or felt. In the three cases demonstrated the tumour of the lower lid was of the size of a pigeon's egg, was blue in colour, and was cystic to the touch. In two of these cases the cyst had been removed and examined. These cysts owed their origin to the arrest of the closure of the fetal fissure of the optic vesicle; the portion of the mesoderm which pushed into the secondary eye vesicle to form the vitreous did not stop growing at the normal time and not only prevented the closure of the fissure but often also produced a cystic extension which had for its walls the layers of the embryonic eye vesicle. The cyst might grow large while the eyeball itself might remain smaller than normal, might be so small as to be overlooked completely, or might disappear altogether. In the one specimen a rudimentary eyeball about two millimetres in diameter was discovered, a regular "kryptophthalmos," and in the other no trace of an eye could be found at all. In the former case the cyst was lined with a layer which appeared to be derived from the outer layer of the embryonic eye vesicle—i.e., the pigment epithelium; in the other specimen the lining of the cyst reminded him very strongly of the inner layer of the optic vesicle which formed the retina proper. The paper was illustrated by slides and micro-photographs.—Mr. Hugh E. Jones and Mr. E. M. Stockdale showed an Angeloma of the Pinna removed from a boy, aged 16 years. Several attacks of severe hæmorrhage had occurred and some of the vessels entering the growth had previously been tied without effect. Microscopically the specimen showed the characteristics of tumours described as plexiform angeloma, nævi, cylindroma, and endothelioma or hæmangio-sarcoma. The whole auricle was removed.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held in the Medical Institute, Belfast, on March 1st, Dr. J. R. Davison, Vice-President, being in the chair.—Dr. J. S. Darling showed a patient from whom the Inferior Maxilla was removed for a sarcoma involving that bone.—Dr. V. G. L. Fielden read a note on the Solar Reflex occurring in abdominal operations.—Dr. Thomas Houston and Dr. J. C. Rankin communicated a paper on the Method and Results of giving Therapeutic Inoculations in Staphylococcal and Tuberculous Lesions. In it they gave an account of the results of the treatment of a large number of cases presenting staphylococcal and tuberculous lesions. The inoculations were controlled as far as possible by determinations of the opsonic index according to the principles laid down by Professor A. E. Wright and his pupils. Lantern pictures showing tables of the opsonic indices in each case before treatment was begun and opsonic curves worked out from cases under treatment were exhibited. The experiments which they had made with reference to the nature of the opsonin supported the view of Wright, Douglas, and Bulloch—namely, that the opsonin differed in nature from the "immune body" or a combination of "immune body and complements." In some 25 cases of staphylococcal lesions they found the opsonic index below unity. It seemed evident that the persistence of the lesion was the result of this low opsonic power in such cases. In some cases at

least the origin of this low opsonic index was connected with the lesion, while in other cases the low opsonic power might be due to congenital deficiency in this respect. Their results showed that this low opsonic index could always be raised by appropriate inoculations and that in many cases a series of inoculations produced a permanent recovery. The results of treatment in the cases of furunculosis were exceedingly good, as the majority of their patients had entirely recovered from their infection. The cases of acne were more prone to relapse, though as a rule the condition had been very greatly improved. With regard to the tuberculous cases which they had treated by this method, they were of opinion that a year's work was hardly long enough to arrive at a definite opinion of the value of the method. Practically all the tuberculous cases had shown great improvement in weight and general condition after beginning the inoculations. Three cases of tuberculous peritonitis seemed to have recovered perfectly and the patients were now in robust health. The patients suffering from bladder and kidney trouble had been greatly benefited by the treatment, although none of them could as yet be said to be entirely free from disease. Several cases of tuberculous adenitis had been greatly improved in general condition and the glands had decreased in size. The only case of pulmonary tuberculosis that had been treated had improved remarkably. Many of the tuberculous patients were still undergoing treatment.—The discussion on the paper was adjourned until the next meeting.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting of this society was held on March 2nd, Mr. E. Ward being in the chair.—Dr. J. K. Jamieson and Mr. J. F. Dobson showed a number of specimens, injected by Gerota's method, illustrating the Anatomy of Various Groups of Lymphatic Glands with their Afferent and Efferent Vessels.—Dr. A. S. F. Grünbaum made a communication on Some of the Pseudo-parasites of Cancer. He said that they might be classified as (1) cell degenerations; (2) cell inclusions; (3) non-specific parasites; and (4) "Pillmer's bodies." Cell inclusions had become more interesting since Moore and Walker, by their discovery of dividing cancer cells containing dividing leucocytes, had brought additional light to Klebs's old hypothesis of the origin of cancer by the fusion of leucocyte and epithelial cell. The appearances classed as Pillmer's bodies were of various origin. The term should be reserved for the structure corresponding, as Moore and Walker had also shown, to the vesicle in the spermatid. Since such vesicle-containing cells often became included in other cells, enlarged and then divided, they seemed to play a part analogous to that of the spermatozoon. The extraordinary size of some cancer cells was thus explained and they were much more frequent in tumours showing clinically also rapid growth. The irregular mitosis indicated that their multiplication did not follow, and probably was not governed by, ordinary rules.—Dr. O. C. Gruner read a paper entitled Cryoscopy, its Practical Use in Medicine and Surgery. After discussing the principles on which the method depended an account was given of the results obtained by examining blood. It was shown that as a rule in renal disease the osmotic concentration of the blood increased; the exceptions to this were occasionally due to the association of serous effusions, whereby the salts were retained. In reviewing the results obtained by examination of the urine it was specially recommended that the cryoscopic findings should be compared, not with what was supposed to be normal, but with what was found to be usual for the particular patient. The "water" test and the "salt" test were described. Reference was next made to the examination of segregated urine to detect unilateral disease of the kidney. An illustrative case was given to show that cryoscopy was of decided use here. Tables of results of the examination of numerous specimens of urine, blood, and other body fluids were shown. A chart giving the osmotic variation occurring during the course of a case of pneumonia was also referred to.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 2nd, Mr. L. A. Bidwell being in the chair.—Dr. J. A. Coultas read a paper entitled "Some Points in Infantile Scurvy." In it he described some cases recently under his care, in one of which extensive hæmorrhage occurred under the periosteum of the femur, the lower epiphysis of the same bone being separated. Although the usual treatment of such cases—namely, milk feeding and the administration of lemon juice—

was adopted the case did not rapidly clear up in the usual way and new bone was deposited under the periosteum which had been raised off the shaft of the bone, so that egg-shell crackling was clearly to be felt. An incision was then made into the swelling and some of the clot turned out, but the child did not recover. A similar case was then described in which no operation was done. It was subsequently found that the reason why the cases had not improved in the usual way was that the dairy company which supplied the institution in which the infants were under treatment had, unknown to the authorities, been supplying Pasteurised milk instead of ordinary cows' milk; when this was rectified the second child recovered. The paper was illustrated by the specimen obtained from the first case and skiagraphs showing deposit of new bone under the periosteum in the second.—A discussion followed in which the President, Dr. Arthur Saunders, Mr. Walter E. Fry, Dr. Boyd B. Joll, and Dr. Muir took part.—Dr. E. Furniss Potter read a paper entitled "Reflections on the Treatment of Chronic Otorrhoea." He detailed the measures that were advised for the routine treatment of a chronic aural discharge by means of injections, drops, and the like, and pointed out that the time necessary and the frequent visits which would be required to the medical adviser made it impossible in a very large number of cases for this form of treatment to be carried out efficiently. He had therefore come to think that the much more frequent adoption of the radical mastoid or complete post-aural operation would be a great benefit to those who were the subjects of a discharging ear. This procedure was safe and in properly chosen cases offered an almost certain prospect of stopping the discharge in a reasonable time.—A discussion followed, in the course of which Mr. Richard Lake showed a number of lantern pictures illustrating the complete mastoid operation.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 2nd, Dr. J. Galbraith Connal being in the chair.—Dr. W. S. Syme showed a case in which Paraffin had been injected into the Cavities after the Double Mastoid Operation. This shortened the treatment and obviated any unsightly depression. He also showed a case in which the Radical Mastoid Operation was performed for urgent symptoms. The lateral sinus was extensively exposed and appeared to be converted into a firm cord.—Dr. J. Stoddart Barr showed: 1. A boy operated on for Extradural Suppuration at the Lateral Sinus consequent upon middle ear disease. The symptoms were headache, shiverings, vomiting, and squinting of the right eye. Dr. J. Rowan examined the eyes and reported paralysis of the right external rectus and marked double optic neuritis but no hemorrhages. After the operation the paralysis of the sixth nerve slowly passed off. The optic neuritis, however, increased and hemorrhages appeared after four weeks. It then began to subside. The urine contained no sugar or albumin. 2. A man who had been operated on for Lipoma Nasi. The hypertrophied parts of the nose were removed in slices and the nose was remodeled. The raw surface was completely covered with epithelium in six weeks.—Dr. W. B. Inglis Pollock reported a case in which he had removed a small Dermoid from a boy's eye. Two-thirds of its circumference were occupied by granulation tissue containing a large number of giant cells and imbedded hairs.—Dr. W. J. Richard showed two specimens of Rupture of the Aorta.—Dr. James Scott showed a Heart with a Minute Aneurysm in the left sinus of Valsalva of the pulmonary artery and with a small tumour, closely resembling a papilloma such as is often seen in the vocal cord, attached by a pedicle to the posterior valve of the same artery.—Dr. Hugh McLaren showed a large Ovary infiltrated with lime salts. He also showed a large Gastric Ulcer which had penetrated the stomach wall but extension to the peritoneum had been prevented by adhesion to a mass of adipose tissue.

MANCHESTER MEDICAL SOCIETY.—At a meeting of this society held on March 7th Dr. Arnold W. W. Lea made a communication on Vaginal Drainage in Children, in which he pointed out that collections of fluid or pus in the pelvis could be more efficiently evacuated and drained by this route. He referred to children of from five to 14 years of age and stated that an indiarubber or glass vaginal drainage-tube was very well borne by even young children.—Dr. J. J. Cox exhibited a boy, aged 12 years, with Rheumatoid Arthritis of four years'

duration. In addition to much general muscular atrophy there was considerable contracture of the hands and of the upper and lower limbs, with limited movement in the cervical portion of the spinal column but no interference with the movement of the lower jaw. Skiagraphs showed little local change in any of the joints with the exception of the two shoulder-joints. Dr. Cox suggested that "myelopathic arthritis with muscular atrophy" would be a better and more descriptive name for such an affection than "rheumatoid arthritis."—Mr. M. J. Chevers read a paper on Branchial Fistula and its Treatment. After discussing the pathology of the condition he mentioned a case occurring in a young woman which he had treated by the application of croton oil to the lining membrane of the fistula. He immediately followed the treatment by the regular use of the galvanic current locally, at first to the fistula internally and subsequently externally. Healing occurred and the cure was apparently complete 12 months later.—Dr. N. O. Haring made a communication on Operations for Deflection of the Nasal System.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held on March 5th, Mr. A. E. Cumberbatch, the President, being in the chair.—The meeting was devoted almost entirely to cases of Intracranial Complications of Middle-ear Suppuration.—Mr. Hugh Jones reported a case in which there was septic thrombosis of the lateral and sigmoid sinuses and internal jugular vein down to the level of the omohyoid muscle. The vein was tied in the lower part of the neck, the sinus was plugged, and the vein was washed out. Seven days afterwards an acute temporo-sphenoidal abscess was evacuated and 17 days later, owing to suppuration of the clot in the lateral sinus, the latter was exposed and obliterated as far as the torcular Herophili. The patient recovered.—Dr. J. Dundas Grant said that he doubted the propriety in these cases of washing out the vein, but Mr. Jones, in his reply, expressed the opinion that there was more danger in leaving septic material in contact with the already thrombosed small branches.—Dr. J. Stoddart Barr reported a case in which purulent right middle-ear disease of 16 months' duration was followed by headache, diplopia, paralysis of the external rectus, and double optic neuritis. A radical mastoid operation succeeded in clearing out cholesteatomatous masses and pus was found in the lateral sinus groove. The patient made a good recovery; the paralysis of the sixth nerve gradually passed off, but the optic neuritis persisted for three months.—Mr. Cheate pointed out that paralysis of the sixth nerve was always recovered from and was due to pachymeningitis of the posterior cranial fossa.

HARVEIAN SOCIETY.—A clinical meeting of this society was held on March 8th at the Hospital for Epilepsy and Paralysis, Maida Vale.—Dr. Leonard G. Guthrie showed a case of Congenital Ataxy in a boy, aged five and a half years. There were incoördination and intention tremor of the upper extremities and the gait was unsteady. The knee-jerks were exaggerated. Instruments had been used at birth. He attributed the condition to cerebellar meningeal hemorrhage. He also showed two cases of Infantile Paralysis.—Dr. H. Campbell Thomson showed a case of Paralysis Agitans with a peculiar gait which he termed intermittent claudication.—Dr. J. F. H. Broadbent considered the condition to be functional.—Dr. Guthrie also held that the gait was functional.—Mr. Barker (for Dr. Ogilvie) showed a case of Tabes Dorsalis in which great improvement in coördination had resulted from physical exercises.—Mr. M. S. Mayon showed a case of Double Congenital Ptosis in a child and also a case of Paralysis Agitans in which rigidity without tremor was present.—Dr. Barker (for Dr. Wilfred Harris) showed a case of Spasmodic Torticollis in a man, aged 41 years, in which improvement had resulted from excision of a portion of the spinal accessory nerve but the spasm was not completely arrested.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Dr. A. Newsolme, the President, being in the chair.—Dr. D. G. Hall showed three cases of Raynaud's Disease, in one of which there was dry gangrene of the left hand and wrist.—Dr. W. C. Chaffer showed a baby with symptoms of Raynaud's disease.—Mr. J. A. Routh showed a Thymus Gland four inches long taken from a child 18 months old who had died suddenly, in whom no other cause of death was found.—Mr. G. Morgan showed a large Sarcoma of the Lung.—

Mr. V. T. Greenyer showed microscopic slides of the blood of a case of *Æstivo-Autumnal Fever*. Many crescents and intracorpuseular parasites were visible. He read notes of the case and also of one of *Paroxysmal Hæmaturia* in which large numbers of bacilli had been seen in the urine.—Dr. O. H. Benham read a paper on the Bacteriology of the Common Cold. He had examined 20 cases and had found various organisms, including the *micrococcus catarrhalis*, but his most frequent finding had been the *bacillus segmentosa coryzae* described by Cautley, and of this he showed cultures and microscopic specimens.

Reviews and Notices of Books

A Text-book of Materia Medica for Students of Medicine. By O. R. MARSHALL, M.D. Vict., Professor of Materia Medica and Therapeutics in the University of St. Andrews. London: J. and A. Churchill, 1905. Pp. 635. Price 10s. 6d. net.

A NEW text-book of materia medica has to justify its existence by the presentation of some new features. The ground is already so well covered that it is difficult to make room for a new competitor for favour. In this book Professor Marshall has certainly introduced some novel features, and he has gained much space by limiting consideration to official substances and their compounds. He states that the object of this book is to serve as a guide to the British Pharmacopœia and as an introduction to pharmacology and therapeutics.

The essential novelty in this text-book is the importance given to chemical constitution; thus after dealing with the inorganic substances and the synthetic organic substances the author groups the animal and vegetable substances employed in medicine according to the composition of the leading active constituent. To a certain extent such classification possesses obvious advantages, since it enables many drugs which have similar actions to be placed consecutively; but, on the other hand, there are certain inconveniences attaching to the plan, since space has to be found for all official drugs and some must be placed in honourable positions to which they have a very slender claim. Thus at the end of the section dealing with drugs containing alkaloids as the main active constituents, a section including the belladonna group, coca, nux vomica, opium, and similar important drugs, we find serpentary root, which "is believed to contain an alkaloid, aristolochine," and though it is stated that no alkaloid has been obtained from the drug, yet "it is convenient to describe it here." In spite of the imperfection of this classification, of which the author is himself conscious, it must be admitted that it possesses distinct advantages over many of the older systems of botanical classification by the natural orders or of arranging together the various roots, woods, barks, and seeds, as though the part employed afforded any useful indications of the action or in any way facilitated the work of the student.

The best intentions are, however, liable to be upset by circumstances and Professor Marshall illustrates the inherent difficulties of classification by introducing a section on "laxative fruits"; although he has little to say regarding the four which are merely used in making confection of senna, he appears to feel some regret that the official mantle has not been cast upon raisins, since they enter into the composition of two preparations. Without defending the inclusion of figs and prunes, tamarinds and cassia pulp, we may suggest that in the pharmacopœia raisins, where mentioned, are distinctly referred to as those "of commerce," and they seem hardly to require more attention either from their importance or from any possibility of adulteration or impurity. The chemical classification has much in its favour; a student of organic chemistry who carefully considers the information here given regarding the constitution of the

alkaloids, for example, will probably have more kindly feelings towards a subject which has perhaps previously perplexed and repelled him and he will certainly be in a better position to appreciate pharmacological actions. It is to be hoped that students will bear in mind the prefatory note which conveys the warning that chemical formulae where given are not intended to be learnt, since materia medica is already overburdened with figures relating to doses and the amount of active constituents. In the prefatory note above mentioned we think the reference to solubilities is rather unfortunate. A general idea is no doubt an advantage but few examiners would be sufficiently cruel to demand more.

This text-book does not deal in any detail with experimental pharmacology, though results which are of practical importance are mentioned. The description of the actions and uses frequently appears somewhat meagre and leaves much to be learnt by practical experience. For example, the frequent hypodermic employment of strychnine in cases of heart failure would scarcely be inferred from the statement that it is used in heart disease when digitalis is contra-indicated. On the other hand, students should be grateful for the 30 pages in which the author has contrived to include much that is useful relating to the Pharmacopœial preparations; in these pages the author goes far towards realising the conception of a guide to the Pharmacopœia, while in the later pages the directions are often whittled down until they become almost unintelligible, as in the directions for the preparation of liquor thyroidei. Many of the older books on materia medica were illustrated with pictures of medicinal plants, in which the whole plant was commonly depicted almost regardless of the special part employed in medicine. The illustrations in this book are intended to portray all those drugs which possess distinctive characters. While admitting the difficulties inseparable from such illustrations and the successful results sometimes obtained there are certain blocks which leave much to be desired, especially those depicting some of the woods and barks.

This text-book presents numerous features which should render it acceptable to students who will find their labours facilitated by a judicious employment of different type for important and unimportant statements, and if it scarcely affords adequate help in prescribing this is a matter that is, perhaps, better studied in actual practice or in a book on treatment than in the pages of a book devoted to materia medica.

Allgemeine Pathologisch-Anatomische Diagnostik. (General Diagnosis in Pathological Anatomy.) By Dr. R. OESTREICH, Privat-docent in the University and Prosector at the Queen Augusta Hospital, Berlin. Berlin: S. Karger, 1905. Pp. 323. Price 6 marks.

Dr. Oestreich in his preface tells us that this book has been prepared on the basis of his practical course of pathological anatomy and that since seeing and feeling are the essential channels of information in regard to the characters of diseased organs his object is to show how the diagnosis of the cause of death can be evolved from the information obtainable by sight and touch. The result we may premise at once is a text-book admirably adapted to the needs of the student and one which should form a very useful manual for the post-mortem room and pathological laboratory. The descriptions of technique and the consideration of theories are for the most part rigidly excluded and the work deals with the method of observing morbid organs and with the conclusions to be drawn from the conditions found. Dr. Oestreich's method is one which we can cordially commend, for it inculcates the importance of an orderly and systematic investigation in every case. The work is divided into two parts, the first dealing with the macroscopical features and the second with the microscopical appearances of morbid tissues and organs. Part I. begins with a consideration of the general

method, including the estimation of size and form, the determination of consistence, the appearances of the surfaces and the sections of the various organs, and then proceeds to the investigation of the contents of the hollow viscera. A well written section follows dealing with the signs of death considered from the standpoint of the pathologist and this in turn is succeeded by a consideration of the cause and manner of death. Various pathological processes and conditions are then separately considered and the changes produced by them are clearly and succinctly described—among them the degenerations, hypertrophy, atrophy, local death, tuberculosis, syphilis, ulcers, and tumours. Part I. concludes with a separate discussion of the diagnosis of pathological conditions of the various systems and organs, each of which is considered on the plan outlined in the introductory sections. This section is conveniently arranged for reference and constitutes an excellent feature of the book. It would perhaps have been improved if a little more detail were given in regard to some of the organs, notably in the case of the pancreas, to which less than a page is devoted.

The second part is subdivided on a very similar plan. There is first a description of the methods of investigation, then variations in cellular structure and intercellular materials are considered in detail. Next, pathological substances such as fat, amyloid, hyaline substance, colloid, and pigment, are described and their significance is discussed. A large section is devoted to the consideration of tumours, their structure and differentiation from one another. Lastly, the individual systems and organs are considered and the various microscopical changes found in them are given.

The book is well prepared and well printed. The style is crisp, the sentences are shorter, and the matter is more concise than we are accustomed to find in many German text-books. There are practically no illustrations save a few diagrams, for, as Dr. Oestreich rightly maintains, no one can learn pathological anatomy from books. We can recommend this volume as one of the best short handbooks dealing with the subject.

LIBRARY TABLE.

The Management of a Nerve Patient By ALFRED T. SCHOFIELD, M.D. BRUX. London: J. and A. Churchill. 1906. 8vo, pp. 267.—Dr. Schofield's work is one which admits of being regarded under two very different aspects. In the first of these it is a valuable contribution by a practical physician towards the better management of the patients who were originally classified by Marshall Hall as "temper cases," and who now are usually described as the subjects of "neurasthenia," of "neuromimesis," or of "functional nervous disease." In its second, and, as we think less laudable aspect, it seems to be an attempt, necessarily unsuccessful, at bringing the vocabulary of a certain set of ecologists into harmony with the teachings of physiology and with the facts of life. When Dr. Schofield writes from the medical point of view he shows himself to be a skilful and painstaking physician and his practical teaching as to the actual management of cases is eminently worthy of being read and remembered.

Beauty of Figure: How to Acquire and Retain it by Means of Easy and Practical Home Exercises. By DEBORAH PRINROSE. London: William Heinemann. 1905. Pp. 146. Price 2s. 6d. net.—Beauty of figure, being the expression of proper proportion and of perfect health, has been an ideal at which the majority of the human race has aimed in all time. As age has succeeded age selective attractiveness caused by superior physical conditions has tended to give that grand carriage of body which has been such a distinguishing mark of beauty from at least the ancient Greek times until our own.

The men of classic Greece lived an open-air life and indulged in systematised gymnastic exercises for the maintenance of the magnificent beauty and strength of their forms; the Grecian women followed suit, making the cultivation of their own individual physical beauty of face and form a matter of daily treatment; they carefully studied and systematised the relations of the proportions of the human body and erected thereon an ideal. With certain modifications that standard is the one which we of to-day aim at for ourselves and work for by means of physical exercises. The women who cannot go in for courses of instruction and practice in physical culture under the direction of professional teachers may attain to the requisite knowledge by a study of this little book. Women if they care to take the trouble can from these pages learn how to walk, how to stand, and how to make their bodies supple and graceful. The exercises suggested and described are well arranged and the illustrations, of which there are 72 and which are a great feature of the volume, will be very helpful in carrying out the printed instructions for each of the many exercises.

Around the World via India: a Medical Tour. By NICHOLAS SENN, M.D., LL.D., Professor of Surgery, University of Chicago. Chicago: American Medical Association Press. 1905. Pp. 347.—Dr. Senn writes that this book is more especially intended for the professional friends whom he met during his travels in different parts of the world and to whom he is chiefly indebted for many courtesies and much information. The text consists of a series of articles published in the *Journal of the American Medical Association*. The first section of the book, which deals with travel as a means of post-graduate medical education, is written in a most judicious strain. The author reminds us that the greatest pleasure to a busy medical man when on a holiday is to see the work of others and the sweetest rest is a freedom from care. The book is a record of travel and medical observation in the Hawaiian Islands, Samoa, New Zealand, Australia, Ceylon, and India; through the latter country the author travelled in midsummer. The following is his observation on the climate of the last-mentioned country: "I am glad that I have seen India at its worst, so far as the climate is concerned, and that I have escaped with my life and my health unimpaired, but I will never advise any of my friends to go through a similar experience, as it involves great suffering and is attended by no inconsiderable immediate and remote risk to life." The book is an interesting souvenir and it contains many observations of value but the author has only covered a beaten track and the travelled man will not find anything new in these pages, though the author's thoughts on old topics are quite worth reading.

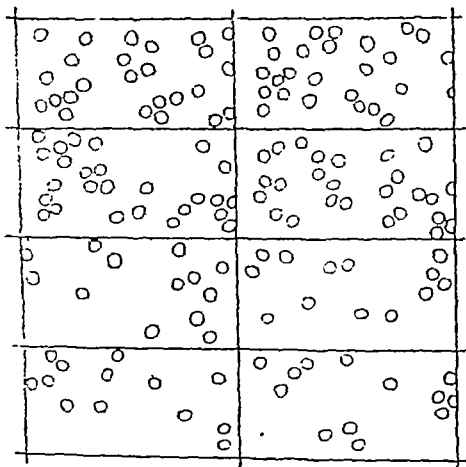
ROYAL DENTAL HOSPITAL.—The annual general meeting of the governors was held at the hospital on March 15th, when the annual report was received and the election of officers for the ensuing year was proceeded with. Mr. David Hepburn, one of the vice-presidents of the hospital, occupied the chair. The committee of management in its report congratulated the governors of the hospital on the continued and increasing usefulness of the institution, the number of patients treated being 27,730 and their attendances 50,911. The following motion of the medical committee was approved by the managing committee: "That in the interests of the proper treatment of the patients some scheme is urgently necessary by which those drugs which are commonly prescribed by the staff may be supplied to patients at a small charge." The committee is pleased to report that all the outstanding accounts to contractors have been paid but it regrets that it unfortunately has to face loans from the bankers of £1150 and also an overdraft to the bankers of £859 15s. 4d., in addition to £143 9s. 5d. for outstanding accounts, and it earnestly appeals for funds to relieve it of these liabilities.

This is a well-prepared dry product of milk presenting the composition of milk of good quality freed from water by evaporation. Our analysis gave the following results: moisture, 8.40 per cent; mineral matter, 5.50 per cent.; proteid, 14.46 per cent.; fat, 24.80 per cent.; and sugar, 48.84 per cent. On adding water to form a paste first of all and then finally diluting until the specific gravity is that of normal milk the result is a fluid resembling milk both in appearance and in taste, while an analysis shows it presents an analogous composition.

New Inventions.

A NEW HÆMACYTOMETER.

In this instrument, as hitherto made, the squares on the slide are one-tenth of a millimetre in each dimension, so that, with normal blood (5,000,000 corpuscles to the cubic millimetre) the dilution adopted and depth of cell yield 50 corpuscles to the square. The average number in two squares thus gives the percentage to the normal. Some observers find it difficult to count the number of corpuscles in the square when this approximates the normal, and still more when the number exceeds the normal, as it sometimes does in peculiar morbid states. To facilitate counting I have



The above figure illustrates the facility in counting afforded by the division of each square into two half squares. In the upper two squares each half square contains 25 corpuscles, each square 50, and the two squares 100 corpuscles, or 100 per cent. (normal). In the lower two squares each half square contains 13 corpuscles, each square 25, and the two squares 52 corpuscles, or 52 per cent. of the normal.

suggested that the squares should be divided horizontally. The instrument is therefore now made with the squares thus divided, so as to form parallelograms, each one-tenth of a millimetre in length and one twentieth of a millimetre in width. There are thus two of these parallelograms to each square; four of them contain 100 corpuscles in blood of normal standard. The comparison with the normal is thus as simple as before, while the numeration is more easily made. The instrument is made by Messrs. Hawksley, 357, Oxford-street, London, W.

W. R. GOWERS, M.D. Lond., F.R.C.P. Lond.
Queen Anne-street, W.

MEDICINE AND THE LAW.

A Successful Prosecution for Libel.

At the recent sessions of the Old Bailey a man named Charles Foxlee pleaded guilty to an indictment charging him with publishing a false and defamatory libel concerning Dr. A. R. Waddell of Potters Bar and was bound over in his own recognisances, with additional security from two sureties, to come up for judgment if called upon to do so. Considering that the graver charge of threatening to publish the same libel with intent to extort money from the prosecutor was upon the record against him but was not proceeded with upon his pleading guilty to the libel itself, and taking into account the gravity of the baseless accusations that he made, together with the outrageously vindictive manner in which he circulated them during several years, Foxlee may be considered to have got off very lightly. The case was referred to briefly in THE LANCET of March 10th, p. 701. Dr. Waddell in 1898

attended the defendant's wife at her confinement and two days later thought it advisable to administer a saline injection to the infant owing to the nurse reporting that there had been hæmorrhage from the navel cord. Soon after this the parents ceased to be attended by Dr. Waddell but were not at this time unfriendly in their attitude towards him. Before long, however, they appear to have become possessed with the idea that the *anæmia* from which their child, no doubt, suffered was due to hæmorrhage at the time of his birth, that this had been caused by negligent treatment on the part of Dr. Waddell, and that the operation which he performed had been cruel, unnecessary, and injurious. In the course of the same year—1898—Dr. Waddell heard that the defendant, the child's father, was making false and grossly defamatory statements with regard to him and warned him at an interview not to do so. Foxlee after this left Potter's Bar and for three years the prosecutor heard of him no more. In 1902, however, he returned and calling upon Dr. Waddell demanded compensation for the alleged condition of his child and had to be turned out of the house. A letter threatening legal proceedings to enforce this claim followed and afterwards another was received, both being left by Dr. Waddell to the Medical Defence Union to deal with, the result being that no more was heard of either. These abortive threats were followed by a series of scurrilous and threatening letters and post-cards written to the prosecutor and to his solicitors. Efforts were made to stop them without recourse to legal process but remonstrance was unavailing and they culminated in one which inclosed a libellous pamphlet and contained a threat to publish it broadcast in the district in which Dr. Waddell practises unless the "compensation" demanded were paid within four days. This was in last October and the threat, after being repeated in November, was carried out shortly before Christmas. The pamphlet, widely circulated among Dr. Waddell's neighbours and patients, contained accusations of a highly libellous character and it became absolutely necessary to put a stop to the defendant's conduct in such a manner as to insure, if possible, against any repetition of it. This has been done, as has been stated, by means of criminal proceedings, which have terminated with a plea of guilty and in the binding over of the defendant to come up for judgment when called upon. At the preceding sessions, however, an adjournment had been granted in order that he might have the opportunity of pleading "justification" (i.e., that the alleged libel was true and that its publication was for the public good), so that his withdrawal of his charges was made at the last possible moment. His counsel, Mr. Percival Hughes, in addressing the Recorder in mitigation of sentence, spoke of the defendant's mind as having almost become unhinged by dwelling upon the subject of his child's illness and no doubt this view was accepted by the court. It is to be hoped that the defendant will recognise the clemency with which he has been treated and that the fact of certain punishment hanging over his head will deter him from renewing his attacks. At the conclusion of the case Sir Forrest Fulton called the prosecutor into the witness box and addressing him said: "Dr. Waddell, I desire to express my great sympathy with you in regard to the scandalous, false, and malicious libel which has been published concerning you, and which is now declared in open court to be entirely without any foundation. I can only hope the circulation of these wicked libels will have no permanent injurious effect upon your professional position." Dr. Waddell and the Medical Defence Union are to be congratulated upon having brought this prolonged persecution to a conclusion.

BRISTOL GENERAL HOSPITAL.—The annual meeting of the governors of this institution was held on March 12th under the presidency of the Lord Mayor. The medical report stated that 2351 in-patients had been admitted, compared with 2344 in 1904. The out-patients numbered 39,089, an increase of 640 compared with the previous year. During the year 440 patients had been sent to the Victoria Convalescent Home. The financial statement showed that the ordinary receipts amounted to £11,174, the ordinary expenditure was £13,387, and a deficit balance of £2213 remained. Mr. J. Storrs Fry stated that a sum of about £10,000 would be required to meet the expenditure required for the erection of an isolation block of buildings for the hospital and also to provide additional accommodation for the nursing staff.

THE LANCET.

LONDON: SATURDAY, MARCH 17, 1906.

The Census of the British Empire.

THE Commissioners of the English Census have just issued from Somerset House what appears to be a valuable report and summary of the census returns of the several colonies and possessions of the British Empire. In the English Census Reports of 1881 and 1891 the only published data of the kind were limited to details of the area and population of the several parts of the British dominions, no attempt being made to compare the social and other conditions of the people. Whilst the tabulation of the results of the recent English Census was in progress Mr. CHAMBERLAIN, at that time Secretary of State for the Colonies, expressed a wish that the statistics in the census reports of the several British colonies, dependencies, and protectorates should be collated and analysed and that comparative tables should be prepared similar to those employed in the English report, and further, that the whole should be embodied in a separate volume to be styled the "Census of the British Empire." The elaborate Blue-book before us is the result and it will certainly strike many as strange that while it relates to matters distinctly of Imperial concern, it is addressed officially to the President of the Local Government Board instead of to the Colonial Secretary who would seem to be more immediately interested in its contents. We should add that in presenting it the Registrar-General and his colleagues apologise for delay in its preparation. The apology is quite unnecessary; considering the mass of information to be digested and collated before such a Blue-book could take shape we think that our statistical bureau is to be congratulated upon punctual attention to a colossal task.

The work has involved the critical examination and analysis of returns concerning the topography and demography of 400,000,000 of His Majesty's subjects scattered over every continent of the globe and including representatives of every race, creed, language, and caste, and in our judgment the Census Commissioners deserve great credit for the thoroughness and the expedition with which this important contribution to Imperial literature has been produced for the information and guidance of the legislature. The volume is essentially an epitome of the reports furnished by the various census authorities at home and abroad, and we are not surprised to learn that owing to want of uniformity in tabulation of the local census returns it has been found impracticable to construct the present report precisely on the lines adopted for the English Census. Census taking in some of the British dominions beyond the seas presents exceptional difficulties, among which may be mentioned the trying character of the climate, the impassibility of many of the roads, the want of competent enumerators, and, above all, the ignorance and superstition

of the native races, some of which are stated to fear that census particulars may be used to their disadvantage for purposes of taxation. These difficulties are enhanced by the world-wide extent of the British Empire. For financial reasons the authorities of some of our East Indian and African possessions, as well as of those of the West Indian Islands, were unable to take a complete census. The best available estimates of such populations have, nevertheless, been procured and inserted in the tables. The reports from which the tables in the present volume have been compiled range in bulk from a ten-page pamphlet concerning the 2000 inhabitants of the Falkland Islands to an elaborate review extending to more than 60 volumes dealing with the manifold races of our Indian Empire, the population of which approaches 295 millions of persons speaking not fewer than 147 distinct vernacular languages. In the present report a detailed series of comparative tables will be found giving for each British colony, dependency, and protectorate information as complete as possible concerning (a) area and dwelling houses; (b) number of the people, distinguishing their ages, sex, and condition as to marriage; and (c) birth places of the people, their religion, education, occupation, and their infirmities. We can only here indicate briefly some of the general lessons to be deduced from the mass of information contained in the Blue-book, while dwelling a little upon the difficulties of estimating our physical infirmities as an empire.

The aggregate area of our colonies, dependencies, and protectorates now amounts to nearly 12,000,000 square miles, or more than one-fifth part of the land surface of the globe. At the time of the 1861 census it comprised about 8,500,000 square miles, so that in a period of no more than 40 years the British Empire has increased in extent by about 40 per cent. Of this vast territory somewhat more than 4,000,000 square miles are situated in North, Central, and South America, 3,000,000 in Australia, 2,500,000 in Africa, and nearly 2,000,000 in the Indian Empire and other parts of Asia, while the portion that lies in Europe constitutes an inconsiderable fraction of the whole, amounting to only 125,095 square miles, of which 121,089 constitute the area of the United Kingdom. Exclusive of the inhabitants of North-Western Rhodesia, of whose number no estimate is obtainable, the British Empire is believed to contain at the present time a total population of about 400,000,000, of which 300,000,000 are in Asia, 43,000,000 in Africa, 7,500,000 in America, and 5,000,000 in Australia, the remainder being in the United Kingdom and the islands of the British seas. The growth of the population can be estimated only very roughly because of the incompleteness of the earlier censuses, especially those of India. Moreover, the real increase of the population has been rendered uncertain by the extension of the area included in the census operations. The rate of increase in the population of the entire British Empire is, of course, governed by that of India, where in a single decennium the increase is believed to have amounted to 23 per cent. It is important, however, to note that in consequence, amongst other disasters, of famine and plague the increase in the Indian population fell between 1891 and 1901 to less than 3 per cent. Excluding India,

the rate of increase in the British Empire, which had been 12 per cent. between 1861 and 1871, rose to 15 per cent. between 1871 and 1881, and then fell to less than 12 and 9 per cent. respectively in the next two decennia. The factor which largely governs the fall in the increase of population is believed by the Commissioners to be the continued depression in the birth-rate which has now become general almost everywhere. In Australia, and especially in South Australia, in Victoria, and in New South Wales, where the matter has recently engaged the attention of a Royal Commission, the fall in the birth-rate is remarkable. This is a matter that must be looked squarely in the face by all thoughtful persons, and to our mind certain obvious reasons for the existing condition of things might be more often made the subject of plain speaking. For whether the decline in the birth-rate be regarded as a proof of waning fertility or as an expression of deliberate selfishness it is equally a menace to our well-being as an empire and equally an indication of a condition of things which is physically and socially pathological. But to turn to more special instances of our infirmities as revealed by the first genuine Imperial census, we find that returns of sickness at the date of the census have been obtained from various quarters, but that before utilising these for purposes of comparison it is necessary to bear in mind the initial difficulty of defining the term "sickness." The Commissioners rightly insist, in view of past experience, that the incidence of sickness is considerably modified by conditions of climate and that the amount of sickness in a community varies according to the time of year. From most countries returns were obtained of the numbers of the blind, the deaf and dumb, the lunatic, and the leprosy. That these returns would furnish interesting information might naturally have been expected, but except in so far as they emanate from public institutions they are believed to be untrustworthy, mainly because experience, even amongst coloured races, shows that parents are unwilling to admit the existence of serious bodily or mental defect in the case of either themselves or their offspring. With regard to infirmities, of whatever kind, the Commissioners tell us that the machinery of an ordinary census is not adapted to furnish statistics of the necessary accuracy. For, in the first place, there is the difficulty of deciding, in the absence of a fixed standard, what degree of impairment of sight, hearing, or mental capacity constitutes blindness, or deafness, or insanity. Secondly, there is the difficulty last alluded to, which would seem to us more likely to occur among races speaking a foreign language than among persons of our own race and colour. The proportion of the population afflicted with various infirmities varies considerably in different parts of the empire. With regard to the blind, it appears that, taking as a standard the ratio of blind to population in the United Kingdom, the proportion of blind persons is twice as great in British Honduras and in Mauritius; between two and three times as great in Trinidad, Tobago, and Malta; three times as great in St. Lucia, the Bahamas, and Gambia; and nine times as great in Cyprus. In Cyprus, however, the enumerators appear to have included among the blind many persons whose vision was merely defective. The report states that in India the number of blind persons has decreased since 1891 in greater

proportion than any other infirmity. Although the relatively high mortality among blind persons in the famine years had some share in that diminution, yet a considerable part of it is traceable to the greater activity of the medical establishments, for the total number of successful operations for cataract in the main provinces of India was 146,295 in the decennium 1891-1900, as compared with 68,226 in the preceding ten years. In Ceylon, where the proportion of blind males is half as great again as that in this country, the Commissioners state as a reason for this excess "the more glaring atmosphere, the dirty surroundings of the lower classes, the presence of flies, the neglect and improper treatment of small-pox, ophthalmic diseases, and leprosy and syphilitic taint." As regards the deaf and dumb we are told that, speaking generally, their proportion to population differs little from that which obtains at home. In the Dominion of Canada, Grenada, British Honduras, and Gibraltar, however, the proportion is twice as high, in Cyprus nearly three times as high, and in Gambia it is nearly four times as high as in the United Kingdom. In the Indian report it is stated that "the extent to which deaf-dumbness may be acquired after birth is uncertain." Discussing the causes of this infirmity, the Indian authorities connect it with cretinism which has been assigned by some to the deleterious properties of certain rivers flowing from the Himalayas. It is noted that deaf-mutism does not specially affect persons of any individual religion or caste. The Mohammedans, in spite of their consanguineous marriages, are not more prone to the affliction than are the Hindus who eschew such connexions.

The proportion of the insane in nearly all the colonies is much lower than that in the United Kingdom. In this country the proportion of the population returned as lunatic and imbecile, or feeble-minded, is the same as that of Malta—viz., 43 per 10,000. The proportions most nearly approaching this are 41 in Victoria, 36 in New Zealand, 32 in New South Wales, 31 in Canada, the Bahamas, and South Australia, 30 in the Bermudas and Grenada, and 25 in Sierra Leone and in Tasmania. Both in India and in Ceylon the proportion of insane and mentally defective persons is steadily decreasing—that is, if the returns are to be relied on. The reporters, however, utter a warning that some of the decrease in the published figures is "probably due to a difference in the interpretation and application of the rule on the subject." Returns of the leprosy were received from ten of our colonies, but it is to be regretted that among our Asiatic dependencies, in almost all of which leprosy is prevalent, returns are available for India alone. At the last census 97,240 lepers were enumerated in India, 1230 in the Cape of Good Hope, 135 in Cyprus, and smaller numbers elsewhere, but in none of the other colonies did the proportion of the leprosy reach 1 per 1000 of the population. The disease is of very little numerical importance except in India, in which country it is gratifying to learn that the efforts to eradicate this scourge are meeting with some success. From the Indian census report it appears that the census of 1881 showed a considerable increase in the number of lepers in that country, and some years later, when public attention was attracted to the subject by the death of Father DAMIEN, a leprosy

commission visited India for the purpose of ascertaining the truth about the alleged spread of the disease, with a view of suggesting means for its eradication. The census of 1891, which was taken whilst the Commission was still in India, showed a marked decline in the number of lepers, and the Commission had no difficulty in disposing of the cry that leprosy was an imperial danger.

In conclusion, the Commissioners summarise the results of their experiences in census taking both at home and abroad for the explanation and guidance of those who may hereafter be entrusted with similar functions. In the first place, the desirability is insisted on that in all parts of the Empire a census should, as nearly as possible, be taken simultaneously, regard being had to differences of climatic, social, or religious nature which may necessitate a departure from this rule in certain definite cases. Regarding the interval between census enumerations it is urged that in no case should this exceed ten years. The Commissioners wisely remark that it is better to ask for a moderate amount of information and to concentrate efforts on getting that amount with the greatest attainable accuracy than to call for much information on many subjects of a more or less desultory character. It is further, in their opinion, desirable that as far as practicable the census questions submitted should be everywhere uniform in character. This requirement does not necessarily mean uniformity in results, for much depends on interpretation of replies, on the classification of statistics, and on the form in which they are presented. Lastly, the Commissioners suggest, in view of the taking of another Imperial census in 1911, the arrangement of a conference between the representatives of our colonies and our home census authorities for the purpose of discussing essential points of difference and arriving at some agreement with respect thereto. As the present is the first serious attempt to prepare a full comparative return of the results of the census of the entire British Empire the Commissioners express the reasonable hope that, notwithstanding the imperfections inseparable from a first attempt, the present volume will awaken fresh interest in Imperial census statistics and whilst tending to promote greater uniformity in the future will create a fresh link of sympathy between the census authorities of the mother country and those of her vast colonies and dependencies.

An Outbreak of Water-borne Enteric Fever and its Lessons.

THE recognition of the fact that enteric fever is at times spread by channels other than water or milk—as, for instance, by dust, shellfish, or polluted soil—has tended in some degree to divert attention from the enormous importance which is to be attached to the purity of public water-supplies. And this importance remains, although, as we mentioned last week, at p. 693, the *bacillus typhosus* tends to disappear rapidly from “raw” river water. There is, unfortunately, a fashion in epidemiology as well as in clothes and some medical officers of health are a little too prone to lose sight of the importance of relativity in the domain of etiology. One of the most recent and instructive lessons on the subject of water and enteric fever comes to

us from the Rhondda urban district, in which place during 1904–05 there was an epidemic of enteric fever which, involving only a small and circumscribed portion of this district, was responsible for 399 cases and 26 deaths between Nov. 1st, 1904, and Feb. 10th, 1905. Upon this epidemic a report of a high order of merit has been made by Dr. J. D. JENKINS, the local medical officer of health.

The district in question has a rapidly increasing population engaged in coal mining and topographically it is divided into two parts by a range of mountains. The water-supply is derived from two main and several subsidiary sources and the epidemic now under consideration was confined almost exclusively to the area of supply of one of these subsidiary sources—i.e., no less than 93·4 per cent. of the total number of cases notified in the whole district were received from this small area which constitutes about one-twenty-sixth of the district in extent and one-sixteenth in population. Of the 1320 houses embraced within the limits of the area involved in the epidemic 257, or 20·2 per cent., were invaded by enteric fever, while of the 19,441 houses in the remainder of the district only 22, or 0·11 per cent., were invaded. Similarly with regard to population. Out of the 7605 persons occupying the water area 373, or 4·9 per cent., were attacked, while the percentage incidence upon the remaining 115,090 persons was but 0·2, the only material difference between the two groups of people being that of water-supply. The water for this smaller population was derived from a gathering ground some 18 acres in extent, which is made up for the most part of rough pastoral land with here and there a small copse or a swamp. On the eastern side the ground was bounded for its whole length by the main road on the far side of which is a quarry in work. Over this area there are eight small catchpits from which the water is conducted to small settling tanks and filter beds, but at the time of the epidemic four of the catchpits were not being used owing to the fact that the water collected by them was regarded as being unsafe for drinking purposes. These catchpits were fed mainly by springs but apparently surface water from the road occasionally reached the pits. Although the gathering ground is not traversed by a footpath human excrement was seen more than once in the neighbourhood of some of the catchpits. We do not propose to follow step by step the evidence connecting this water with the epidemic; it must suffice to say that opportunities for faecal pollution of the water were obvious and that the general behaviour of this outbreak was consistent with the view that it was water-borne and inconsistent with the view that any other of the several possible agents had been operative. We should, however, have liked more information as to the reasons why this gathering ground was not properly protected from the risks of pollution and as to what steps have been taken to prevent its further pollution in the future.

But this case is illustrative of what is not improbably taking place in practically every county of England and Wales—i.e., the consumption of water which is exposed in some degree to the risks of specific pollution, and it may be added that probably the provision of additional supplies similarly exposed to pollution will receive Parliamentary

sanction during the current session. Schemes will be submitted and, if necessary, expert evidence adduced in support of such schemes and in the absence of a very strong opposition sanction will be given to gathering grounds which are as much exposed to the risks of contamination by human excrement as was the case in the Rhondda valley. The committees before which these Water Bills come are not composed of those who are able to deal adequately with the problems involved and no independent inspection of the gathering grounds, and so on, is made prior to the passing of the Bills. To remedy this very undesirable state of affairs it is necessary that a careful survey of the areas involved should be made by Local Government Board inspectors whose knowledge thus obtained should be available for the information and the assistance of the committees. In this manner it would be possible to make provision in the Bills for proper precautions or, where necessary, for the substitution of another and better scheme. Until this is done the story of the Rhondda valley outbreak will be retold again and again in different parts of England and Wales. With reference to existing supplies we should like to see a general survey commenced, county by county, of the whole of England and Wales by the medical inspectors of the Local Government Board and the facts appertaining to each supply clearly set out with maps and diagrams for reference purposes. The existing staff would need material increase if anything approaching an early report was desired but in the meantime we should like to see a beginning made and the fact that such a survey was in progress would in itself produce a good effect. An alternative to this proposal is at once to carry out the recommendations contained in the third and fourth reports of the Royal Commission on the Treatment and Disposal of Sewage—i.e., to establish throughout the country large Rivers Boards invested with powers to take definite action with reference to pollution in the several watersheds. But there are apparently no indications at the present juncture of legislation on the lines laid down by the Commission, and in the meantime progress might be made by adopting the suggestions put forward above.

A Hospital for Paying Patients.

THE letter on hospital finance which was recently contributed to the *Times* by the Hon. SYDNEY HOLLAND, and which leads up to the suggestion that it would be desirable to establish in London a surgical hospital for the reception of patients able to pay the management for the expense of their nursing and maintenance and to make their independent pecuniary arrangements with their medical attendants, is one that demands careful consideration alike from the public and from the profession. Mr. HOLLAND, as the chairman of the largest metropolitan hospital, and as a man who, unsparing of his time and energy, has for many years given the closest attention to all the problems of hospital management, speaks from extensive experience with an authority that all will readily allow. He declares that in his opinion the constant increase in the demands made on behalf of hospitals is mainly due to the increasing resort to them of people who are neither rich nor very poor, who can afford a little but not a great deal, small shopkeepers, clerks, tradesmen, and so on, who become the subjects of

maladies which have recently been brought within the domain of surgery, and from which those who now suffer from them expect to be cured by some form of operation. The expectation in a large proportion of the cases is quite reasonable, but the possibility of its fulfilment depends upon the complete maintenance of aseptic conditions, or, in other words, upon the removal of the patient to a building and to surroundings constructed and administered with special reference to his requirements, while in many instances the operation is of a character that could only be attempted by a surgeon whose position upon the staff of a hospital has given him familiarity with the procedure to be employed. The necessary conditions are supplied by hospitals and, perhaps, by a few nursing homes, but the classes of which Mr. HOLLAND speaks cannot, he tells us, "afford a really good nursing home, and those that are not really good are thoroughly bad." There are many operations which no prudent surgeon would undertake in an ordinary private house occupied by persons of the class which Mr. HOLLAND describes; and therefore, he says, in spite of their disinclination to accept a charity which they feel was never intended for them, such persons are compelled to resort to a hospital. As a result, the wards are largely filled with patients who belong to the class which is most expensive to the hospital, who have no wish to go to hospital, for whom the hospitals were not intended, but who have no option. Mr. HOLLAND is of opinion that the conditions which he describes might be effectively met by the construction of a properly organised private hospital, such as may be found in some American and colonial cities, provided not only with general wards, in which the charges were sufficiently low to suit all who can pay, but also with a large number of separate rooms of all sizes and with special suites of apartments, so as to accommodate every grade of society and to suit everyone's purse. To such an institution every surgeon might send his patient and continue in attendance upon him, and the patient would make his private arrangements with regard to surgical fees. The hospital would charge only for accommodation, food, and nursing. Such an institution, Mr. HOLLAND thinks, would relieve the charitable hospitals from the strain of maintaining many of the most expensive of their patients. It would set free numbers of beds that are intended for poor people and patients could be allowed to remain longer in the hospitals. It would prevent the sick from being compelled against their wish to accept a charity that was never intended for them.

Mr. HOLLAND's description of a certain class of hospital patients is, of course, perfectly accurate, but we hesitate to endorse his belief that many of them desire to pay adequate sums of money for their treatment. And we doubt whether the establishment of paying hospitals, even if so arranged that the public would receive recommendations of them from the general practitioner, would distinctly relieve the evils of hospital abuse. It is unfortunately only too true that large numbers of people who could pay a moderate sum for maintenance and for surgical attendance do resort to hospitals; and it is exceedingly probable that, if the propriety of their doing so is challenged by the authorities, they may express quite poignant regret for the necessity in which they find

themselves. It is generally believed in the medical profession that such regret is often only skin deep and that the patients accommodate themselves to the position with great and even touching resignation. And we cannot believe that the conditions described by Mr. HOLLAND are accountable for more than a small portion of the "abuse" to which he refers. We published last week a report of the meeting of the council of the Metropolitan Hospital Sunday Fund at which a statement was made, on behalf of the Committee of Distribution, to the effect that the serious increase in the number of out-patients is detrimental to the welfare of the hospitals and of the patients, inasmuch as they are a burden to the hospitals and prevent the hospital staffs from giving the necessary attention to serious cases. On this occasion Sir WILLIAM S. CHURCH, Sir DYCE DUCKWORTH, and Mr. SYDNEY HOLLAND joined in denying that the out-patient departments were abused, at any rate to the extent popularly believed, but for our part we consider that there has been no great exaggeration. Apart from this aspect of the question it is perhaps not open to doubt that the establishment of such a hospital as that contemplated by Mr. HOLLAND, if it did not diminish the abuse of charitable hospitals by the well-to-do, would at least diminish the excuses for it. Also it would render it more easy for the authorities of these hospitals to guard admission both to the out-patient departments and to the wards by proper precaution against the intrusion of persons well able to pay.

But whether the proposed hospital for paying patients would meet a demand and could be so conducted as to be self-supporting is not so certain as many of our lay contemporaries have decided. Mr. HOLLAND says in his letter to the *Times* that in London, so far as he knows, there is only one pay hospital, Fitzroy House, which he describes as "good, well-managed, and comfortable, but too small." He does not explain for what it is "too small," whether for the conduct of its work in a satisfactory manner or for the reception of the number of persons who desire to enter it. If the latter be meant there is obviously room for duplication or enlargement. Mr. HOLLAND also says that there are pay wards at Guy's Hospital, St. Thomas's Hospital, the Great Northern Central Hospital, and the Poplar Hospital; but the public necessity which he describes could only be met by a hospital which was as accessible as a hotel and in which all the surgeons using it would stand upon a footing of absolute equality. There must be no question of the preponderating influence of the medical staff of an allied charitable institution. Mr. HOLLAND has omitted from his enumeration two establishments, the experience of which might furnish valuable data with regard to the financial prospects of the institution which he desires to see. One of these is the King's Hospital for Officers in Grosvenor-gardens and the other is the Institution for Invalid Gentlewomen in Harley-street. We are not informed with regard to the charges made at the King's Hospital but it provides precisely what Mr. HOLLAND requires for the class of patients with which it deals; and we have no doubt that the lady who chooses to be known as Sister AGNES could impart information which would be of the highest value to any society of persons who might desire

to found such an institution as that which Mr. HOLLAND suggests. The other establishment is partially supported by voluntary charitable contributions and, we believe, finds them indispensable. There are then, it seems to us, sufficient sources from which evidence can be drawn as to the chances of financial success for a paying hospital upon the usual lines, and we do not think that the prospect is a very attractive one. The objection to the ordinary nursing home is that it is often the property of a retired nurse or other person not possessing sufficient capital for necessary expenditure, so that it is liable to fall short of perfection in matters of detail which may be all-important, while at the same time its proprietor has to make a living out of the restricted accommodation which a single house will afford. In such circumstances, if the home has a sufficient connexion among leading surgeons, the proprietor may be able to keep it full of patients paying high charges for the rooms which they occupy, and we have even heard a story of an intending patient of very moderate means, who had made a timid request for some abatement of these charges, being confronted by a shrill virago who declared that the home was not conducted for amusement. We do not think that what Mr. HOLLAND desires will be practicable and satisfactory in any other way than as a perfectly self-supporting institution not affiliated to an existing charity and not subsidised by any, and it is manifest that it could only be successfully conducted under strict surgical supervision. This almost amounts to suggesting that a group of medical men, in particular of hospital surgeons, should form themselves into a joint-stock company for the purpose of establishing a nursing home which should be beyond reproach and which should be conducted at rates to pay a reasonable interest upon the capital required. This is a prospect that we do not view with much approval.

Annotations.

"Ne quid nimitis."

CRIER AND WIFE v. HOPE AND CURRIE.

THE case of *Crier and Wife v. Hope and Currie* which has engaged the attention of the courts for some days is one of great interest to all medical practitioners. The plaintiffs sued the defendants, a firm of medical men, to recover damages for alleged negligence on the part of Dr. G. B. Currie, whereby he was said to have communicated scarlet fever infection to the female plaintiff. A report of the main details of the case will be found in another column. The action raises some points of great importance with regard to the possible conveyance of infection by medical men to their patients. In his evidence the plaintiff contended that Dr. Currie was bound not to attend any infectious cases before coming to attend his wife. Apparently he considered also that a reasonable precaution on the part of a medical man would be not to attend any scarlet fever patients if he expected within a short time to be in attendance on a patient in her confinement. Theoretically this is no doubt a counsel of perfection which all medical men would wish to follow, but practically it is impossible. In many instances a medical practitioner does not know until he sees his patients what disease they may be suffering from, and with the best

intentions in the world from time to time, especially when epidemics are prevailing, he may be brought into contact with various infectious diseases. We may therefore in discussing this case start with the assumption that it is quite impossible for the ordinary general practitioner in the course of his daily work to avoid coming in contact with infectious diseases of different kinds. Allowing this to be so, what is his duty to his other patients? The obvious answer to such a question must be that he is bound to take every possible precaution to avoid carrying infection from one patient to another. As Mr. Justice Lawrence pointed out to the jury in his summing up in the case in question, the mere fact that a medical man has by accident carried infection to one of his patients does not render him liable so long as it is not due to any want of care on his part. If such an unfortunate circumstance does occur the question to be answered is, Were the precautions taken those which a reasonably skilful medical man would take? In answer to this question the jury agreed that Dr. Currie had taken the usual precautions and found a verdict therefore for the defendants. It is impossible and inexpedient to attempt to lay down strict rules as to the nature of the precautions to be adopted in any given case. The medical man who gave evidence upon this point were far from unanimous in their opinions. Our own view is that it is better to err on the side of safety and to endeavour to take every conceivable precaution rather than to run any undue risks. Even if the puerperal woman is not specially prone to develop scarlet fever, yet in the circumstances she undoubtedly is predisposed to almost any kind of infection if only from the fact that she is not in her usual health, and in view of the close personal contact which must exist between the medical man and his patient during a confinement the precautions to be taken to avoid infection can hardly be too stringent. Whenever possible it is undoubtedly best for the medical man for the time being to give up attendance on cases of midwifery. In the event of the practitioner working single-handed this may prove impracticable but where there is an assistant or a partner such a solution of the difficulty should not be beyond attainment. It may be urged that patients do not like changing their medical attendants, especially in the event of their expecting a confinement, but if the reason for such a change is pointed out to them any such objections should be easily overcome. Naturally, it must frequently happen that such a course of action is not feasible. In these circumstances the practitioner must endeavour to protect his patient from any risk of infection to the utmost of his ability. The safest and therefore the best kind of safeguard is undoubtedly a complete change of clothing and a bath with the free use of antiseptics. In busy general practice so complete a disinfection often must prove quite beyond realisation. Such simple precautions, however, as the wearing of an apron, to be obtained in almost every household, during the conduct of a confinement and the wearing of a light waterproof overall when visiting infectious cases such as scarlet fever, in addition to the most thorough cleansing of the hands, should not be beyond the powers of even the most busy general practitioner. The knowledge that he has taken the utmost precautions cannot fail to prove a comfort to the medical practitioner who sees infection spreading from one of his patients to another, while the haunting dread that he himself may be the source of infection cannot but increase the many mental anxieties inseparable from the life of the overworked and harassed medical man. The further proof which such a trial as this affords, that even a medical man may be put to the expense and annoyance of defending his actions in a court of law, will render him less likely to relax any one of the rules, which he has laid down for his conduct in these

cases, even although constant familiarity with such risks and long immunity from an accident may tend to lessen his sense of the danger of infection to which his patients inevitably must be subjected from time to time.

BARMAIDS IN BURMA.

IN connexion with the leading article on Barmaids which appeared in THE LANCET of Jan. 27th, p. 239, we have received from a correspondent at Rangoon an interesting account of the successive steps by which the employment of women in drinking-bars has been prohibited in Burma. During the last few years the proprietors of such bars in Rangoon had imported and employed English women for the purpose of attracting customers and of increasing the consumption of liquor, and the evils and scandals incidental to, or consequent upon, the practice became so manifest to the respectable portion of the British community as to lead them to take active steps in the direction of reform. The organisers of the movement determined to refrain from resting it upon the religious or temperance aspects of the question and took their stand solely upon grounds of humanity, hygiene, and public policy. A petition was addressed to the Financial Commissioner of Burma asking for a total prohibition of the employment of women in drinking-bars and the Commissioner, after proper investigation, issued the necessary order. The bar proprietors appealed to the law and the order of the Commissioner was declared to be in excess of his powers, but in December, 1903, a Bill to amend the Burmese excise law was introduced by his successor and was passed by the Council in January, 1904. Under its provisions rules absolutely prohibiting the employment of women in public drinking-bars will come into force in Burma in the now approaching month of April. The law in Bengal has been strengthened in the same direction and the employment of women in the manner indicated has already been forbidden in Calcutta. It is manifest that the possible degradation of English women before Orientals would for many reasons be specially objectionable, but in all essentials the conditions are alike in all countries, and we cannot but congratulate the Governments of Burma and of Bengal on having set examples which, we trust, will eventually be followed both at home and in the colonies.

INDECENT PUBLICITY AND THE FEEBLE-MINDED.

AT a recent sitting of the Royal Commission on the Care and Control of the Feeble-Minded Dr. Henry Maudsley, who gave evidence, called attention to the need for improvement in the machinery by which action has now to be taken when it is desired to protect the persons and the property of feeble-minded persons. He pointed out with regard to this that in order to prove such a person incapable of taking care of himself and of his affairs an inquiry may have to be instituted, not before a Master in Lunacy only but, when a jury is demanded by the person sought to be controlled, before a Master and a jury. This course entails the employment, almost necessarily, of solicitors and counsel upon both sides and all the great expense of a protracted hearing, with the additional drawback that there is no certainty that the result will be a decision in accordance with the weight of evidence or to the benefit of the alleged feeble-minded person, but, on the contrary, a risk lest a jury consisting of laymen may misunderstand or disregard the testimony of experts under the influence of prejudice and sympathy. They may, in short, be led to a conclusion disastrous to the feeble-minded person by the belief that he is defending himself against an attempt to deprive him of his property and to incarcerate him as a lunatic. The

It might, perhaps, be imagined, says a writer in the *Archives de Médecine et de Pharmacie Militaires*, that in consequence of the weeding-out process in operation all the weak lives would be eliminated during the early years of their service but apparently the longer a soldier continues abroad the more susceptible he becomes to the effects of climate. Doubtless, if the men were not sent out for the first time until they were matured by age the result would be different but there are no data by which this point can be determined. It is concluded, however, by most observers that the progressive deterioration of constitution in the older residents is due to the debilitating influences to

which they were subject while still immature. Commenting upon the diseases which were responsible for this waste of life and health, the same writer deplures the excessive ravages committed by the malaria which "dominates the pathology" of most of the French colonies. In 1903 it caused 8632 admissions to hospital and 134 deaths among the white soldiers and also led to the invaliding to Europe of 1923 of them. Per 1000 of strength these figures give the following rates: admitted, 325; died, 5.4; invalided, 72. The rates per 1000 for the native troops were as follows: admitted, 118; died, 3.7. Another disease of great virulence is described as bilious hæmoglobinuric fever. 112 Europeans suffered from it, with 42 deaths, a mortality equal to 37.5 per cent. on the attacks. Amongst the natives there were 107 cases with 34 deaths. It is worthy of note that the Europeans acquired the disease almost exclusively in Africa, whereas the natives of that continent who remained perfectly immune while at home became victims when transferred to stations in Asia, especially Annam-Tonkin. Typhoid fever caused 125 admissions to hospital and proved fatal in 20.8 per cent. of the cases. It was chiefly prevalent in Martinique where it is said to have increased greatly in severity since the volcanic eruption of 1902. The water-borne theory of infection is in favour with the great majority of the medical officers serving in the French colonies.

TEA AND ALCOHOL.

TEA has undoubtedly its victims as well as alcohol, though we think that it would be absurd to say that the former beverage shares with the latter any serious connexion with crime. Both, of course, may easily be sources of disturbance to health, and immoderate tea-drinking is, in one sense, just as physiologically sinful as drinking an alcoholic beverage to excess. Alcohol is, of course, a more insidious poison than tea and its effects are more drastic and perceptible. Nevertheless, tea may be equally stealthy in disturbing functional equilibrium. As a factor in disease excessive tea-drinking is very often overlooked and it does not occur to many persons that tea may be the source of their trouble. At any rate, when the abuse of tea in such instances gives place to the drinking of it in a rational manner and in moderate quantities the common symptoms of disturbance of the gastric function, such as flatulence and irregular action of the heart, and of the nervous system, such as tremulousness and excitability, disappear. The tea drunkard and the alcohol drunkard are both victims of excess; they abuse these beverages and the results are analogous; they wilfully step from the path of physiological righteousness and the sequel is disease. The word abuse, in fact, sums up the whole question when we look at it temperately and without prejudice. Persons of intemperate views, on the other hand, hold that when a risk of abuse exists it is folly in any circumstances to tolerate use, and so we have amongst us organised movements for the suppression of alcohol, tea, tobacco, sugar, meat, and so forth. Our remarks are prompted by a spirited discussion taking place in a provincial paper which arose out of the defeat by a powerful teetotal movement of a proposal to license a public-house. A medical correspondent expresses some strong views on the subject and, although we think that he is rather inclined to exaggerate the evils due to tea-drinking as a set-off against the views of "the fanatic teetotaler" on the alcohol question, undoubtedly he has some very good evidence on his side supporting his contention that excessive tea-drinking is in a great many instances accountable for disease. If anyone were desirous, he says, of amassing a fortune, no surer plan of rapidly doing so could be suggested than to make up a pill of some innocent material, to advertise its merits, but to make only one stipulation, that the patient while taking this pill should abstain from tea. "The pill would have

an enormous sale, it would do a vast amount of good, relieve a great deal of suffering, in fact, prove more beneficial than closing half the public-houses." A medical man has obviously some convincing evidence of the evils of immoderate tea drinking to justify him in making such a strong statement as this. We have often heard of the existence of "tea drunkenness" which was epidemic in its dimensions in the swarming districts of a great industrial town, but we confess to some scepticism as to whether the "tea evil" was anywhere in any sense commensurable with the "alcohol evil." Still, we know that in poor families where the teapot is always on the hob and the worst qualities of the leaves are thoroughly extracted, the imbibition of the poisonous stew being indulged in all day, the effects on the health have many points in common with those arising from the alcohol habit. Such persons are, as a rule, ill-nourished, tea often being taken effectively to stay the pangs of hunger, they are confirmed dyspeptics, gastric ulcer is common amongst them, and their nervous system is seriously affected. Campaigns against the evils wrought by the abuse of a beverage which can be blessed rather than accursed in its effects have our entire sympathy, and we do not allude merely to tea alone.

THE PREVENTION AND EARLY TREATMENT OF SYPHILIS.

THE interesting address delivered before the Harveian Society on Feb. 8th by Mr. Campbell Williams and published in THE LANCET of Feb. 10th, p. 261, recalls the fact that the Committee on Physical Deterioration strongly recommended that a Government inquiry should be made as to the hospital and other provisions for the treatment of venereal diseases, especially syphilis. A few years ago a memorial was addressed to the late Lord Salisbury and after his death to Mr. Balfour, the then Prime Minister, by Colonel Long, M.P., and ladies in London praying for a similar inquiry. These ladies pointed out that their attention had been drawn to the shockingly diseased condition of women and girls admitted into rescue homes; also to the fact that women suffered from diseases which, at first difficult to name, were afterwards found to be syphilitic. While wholly objecting to any re-enactment of the Contagious Diseases Acts they were fully cognisant of the importance of prompt recognition and treatment of these diseases. In the year 1899 Mr. Frederick W. Lowndes, consulting surgeon to the Liverpool Lock Hospital and senior surgeon to the Liverpool police, published a brochure on the "Study and Treatment of Venereal Diseases, especially Syphilis," being a contribution to the *Liverpool Medico-Chirurgical Journal* for January, 1899. He treated his subject in an able manner and deplored the apathy of the general public and committees of hospitals as to the prevention and treatment of syphilis and other venereal diseases. He pathetically described the chequered career of the Liverpool Lock Hospital with which he had been connected as surgeon for 23 years and which, up to the end of the year 1886, contained 25 beds for males and 25 for females, the former of which were always full. From the year 1854 to 1881 a total of 13,163 patients were admitted, of whom 5144 were females. In the year 1887 the hospital was unfortunately required to provide medical wards during the rebuilding of the Liverpool Royal Infirmary, of which it was an adjunct, and was closed to special cases for four years. It was reopened in August, 1891, for the reception of patients but with the enactment that no males should be admitted except on payment of 7s. per week, also that females should pay the same amount except those coming from homes for fallen women. The tariff, as might have been expected, had a prohibitory effect and the wards were rarely more than one-quarter full. When the hospital was free of charge males applying for admission had generally to wait some time for

an empty bed. In 1899 the hospital was closed to in-patients and an out-patient department was substituted, becoming now an out-patient department of the Royal Infirmary. It is doing a useful work but the want of beds for serious cases is to be deplored, especially in the matter of innocent married women and others suffering from syphilis accidentally acquired who have no other resort than the lock wards of the workhouse. Mr. Lowndes emphasises the fact that the only lock hospitals in England are found in London, supplying 126 beds; in Manchester, about 20 beds; and in Bristol, 17 beds. He found on his last inquiry that the number of beds available for females in lock wards in the 12 principal London hospitals was only 57, though there used to be set apart for females lock wards containing in all 124 beds in the following hospitals: Guy's, 30; St. Bartholomew's, 50; St. Thomas's, 30; Middlesex, eight; and King's College, six. In nearly all the remaining hospitals he stated that there are no beds for such diseases. With regard to the non-accommodation for such cases in London hospitals, it does not follow that cases are not admitted because there is no special ward attached to a hospital for the cases. There were, for instance, many such cases admitted to St. George's Hospital in recent years and, as a matter of fact, they were generally admitted to the same ward although this ward was not specially retained for them. It is, however, urgently required in the interests of public health that some means should be found for the prevention and the early treatment of syphilis, the ravages of which are so far-reaching, and that provision should be made other than the workhouse hospitals for treating persons suffering from venereal diseases.

LATERAL DEVIATIONS OF THE FINGERS.

In the *Gazette Médicale du Centre* of Feb. 15th Dr. Dubreuil-Chambardel has published an important paper on a deformity which, though not rare, has received little attention—lateral deviation of the fingers. When the finger is deviated to the radial side the deformity is termed "varus"; when it is deviated to the ulnar side the deformity is termed "valgus." Dr. Dubreuil-Chambardel has examined the hands of 2500 persons and in the 5000 hands found the following deviations: thumb, varus four and valgus five; index finger, varus 15 and valgus none; middle finger, varus four and valgus six; ring finger, none; little finger, varus 14 and valgus none. In the majority of cases the deviation affected only the two last phalanges but there were differences according to the finger examined. In the middle finger the last phalanx was solely involved. In the 15 cases of index varus the two last phalanges were affected 12 times and only the last phalanx thrice. In the 14 cases of varus of the little finger the two last phalanges were affected nine times and the last phalanx five times. In the thumb only the last phalanx was affected. The deviations were almost always bilateral, except those of the thumb which were usually unilateral. They were often accompanied by homologous deviations of the corresponding toes. Thus with index varus there was varus of the second toe and with varus of the little finger there was varus of the little toe. In general the deviations of the toes were less marked than those of the fingers. The degree of deviation was determined by measuring the angle formed by the intersection of the axis of the first phalanx with that of the deviated one. The greatest deviation, 130°, was encountered in a case of index varus. The deviations of the middle and little finger were always slight. The deformity of the phalanges was studied in radiographs of index varus and in the skeleton of a hand presenting this condition. Generally there was no deformity of the shaft, no abnormal curve. In some cases, however, the shaft was a little diminished in length and the finger a little shorter than

normal, reaching scarcely to the base of the last phalanx of the middle finger. The deformity was essentially one of the articular ends of the phalanges, particularly of the distal end. The external condyles of the distal ends of the first and second phalanges appeared as if atrophied so that they were not in the same horizontal plane as the internal condyles. At the proximal ends of the second and third phalanges there was slight increase of volume of the external portion. The result of these deformities was to produce a sort of subluxation. The joints involved were very mobile. Abnormal lateral movements were possible and the deviation was easily reduced. These lateral movements diminished with age and were not possible after the age of 30 years. Evidently at birth the ligaments and muscles were not much involved but afterwards, as the result of the vicious attitude, secondary retraction of the muscles and ligaments occurred and fixed the bone in an abnormal position. In the neighbourhood of the affected joints subcutaneous bursæ constantly formed as a result of the friction on the adjacent finger or of repeated pressure from external sources. Like other deformities of the fingers, heredity plays an important part in the etiology of lateral deviations. As to the pathogenesis, the deformity appears to be an anatomical variation and of the same nature as other osseous variations, such as those in the condyles of the lower jaw. When the deformity is slight it is of no importance but when marked it may be an obstacle to manual occupations such as sewing and writing. The subcutaneous bursæ may become the seat of a hygroma which may become inflamed and suppurate. Treatment is necessary only when the deformity is marked. The deviations of the middle and little fingers are too slight to require treatment. On the other hand, deviations of the thumb and index finger should be treated as early as possible. Dr. Dubreuil-Chambardel recommends that on every second or third day forcible movements of reduction should be made for from 10 to 15 minutes. After about a month complete reduction becomes possible. Then a plaster splint is applied which maintains the finger in good position and is worn for several months.

SOME OBSERVATIONS ON THE PHARMACOLOGY AND DOSAGE OF DRUGS.

In a paper on Standardisation in the *Pharmaceutical Journal* of Feb. 24th Mr. W. Kirkby raises the question whether it is possible for the principle of standardisation of galenical preparations for alkaloids to be extended until further progress has been made in pharmacology and therapeutics. He points out that the therapeutic application of drugs is very largely based upon clinical experience, which explains the fact that many practitioners continue, and prefer, to use the galenical preparations of opium and *nux vomica* rather than the solutions of morphine and strychnine. Our knowledge of the chemistry of these drugs suggests a difference between the action of the galenical preparations and that of the pure alkaloids. Thus opium, which should contain 10 per cent. of morphine, may contain as much as 1 per cent. of thebaine, to which no importance is attached in a pharmaceutical assay. But thebaine possesses so different a pharmacological action from morphine that it approximates more nearly to strychnine than to morphine. These remarks apply with even greater force to narcotine, which likewise resembles strychnine in its action and may be present in opium to the extent of from 2 to 10 per cent. In the case of preparations of *nux vomica* the basis of standardisation is strychnine and no regard is taken to the brucine present which, though less toxic than strychnine, has a much more powerful action in some respects, notably upon the nerve terminations in voluntary muscle. Mr. Kirkby then draws attention to the difficulty which a medical man

experiences in fixing the dose of a drug in any given case. In prescribing the optimum dose of a drug regard must be had to the body-weight of the patient, his habits, emotions, and temperament, his idiosyncrasies, and, Mr. Kirkby might have added, the age, sex, family history, and other factors. Mr. Kirkby shows that the standardisation of drugs furnishes the first constant for the determination of these variables but he does not think that a constant obtained by standardising one constituent of drugs of complex and variable composition—e.g., opium and nux vomica—is of much value in this respect. The scientific physician requires the more complete isolation of active principles, the improvement of their methods of extraction, and the production of galenicals based upon sounder principles.

SNAILS AS FOOD

A DISH of snails is hardly ever seen in this country, although in Spain and in France this mollusc is a fairly common article of food amongst the poor, while it is held in great esteem by the gourmet when it is stewed and garnished with herbs and condiments. The suggestion that the snail should form a cheap article of food in this country has been revived and there is nothing to be said against the proposal from a dietetic point of view, for properly cooked the snail is both nutritious and tasty. If, however, the suggestion were seriously acted upon we fear that the supply in this country would prove to be short of the demand. But doubtless the snail could be cultivated as is the oyster when it was found that it had gained a considerable patronage. The snail has indeed been called "the poor man's oyster," though we do not remember to have seen it eaten raw. We know, however, that it makes an excellent fish sauce and may be used for the same purpose as oyster sauce. Possibly also a few snails in a steak-and-kidney pudding would increase the tastiness of this popular food. Care must be exercised in the choice of the snail for food purposes as it is well known that snails feed on poisonous plants and it is the custom in France to allow a few days to elapse after they have been taken from their feeding ground in order that any poisonous matters may be eliminated. Most of the snails in France used for edible purposes are collected from the vineyards of Burgundy, Champagne, and Lorraine, which, we may be sure, afford a perfectly clean feeding ground for the snail considering the care which is taken to protect the vines from disease. According to analysis very nearly 90 per cent. of the solid matter of the snail is proteid matter available directly for repairing the tissues of the body. Besides this there are about 6 per cent. of fat and 4 per cent. of mineral matter, including phosphates. Compared with the oyster, this would show that the snail contains about 100 per cent. more nutritious substances. The suggestion, therefore, that the snail should be used for food is not merely sentimental.

THE TREATMENT AND PREVENTION OF PULMONARY TUBERCULOSIS.

THE public health department of the St. Pancras borough council has recently issued some leaflets containing valuable and interesting information in reference to the treatment and prevention of pulmonary tuberculosis. Numerous inquiries are constantly being made of medical practitioners as to the institutions into which patients in an advanced stage of the disease can be admitted. It is not always easy to reply to such questions. One of the leaflets contains the names of homes and institutions where patients in various stages of the disease can solicit aid. These institutions are divided according to whether the patients are destitute and unable to obtain any other means of help or

are "impecunious" but able to secure the interest of subscribers or guarantors of the various hospitals or are able to contribute some sum towards their support. It also indicates the means by which other patients, who are usually classed as "well-to-do," can obtain information as to "sanatoriums for incipient consumptives." Another of the leaflets refers to the voluntary notification of pulmonary tuberculosis. Instructions are given as to the collection of the sputum for bacteriological examination and also the necessary steps to be adopted in the voluntary notification of the disease are indicated. The significant warning is added, "The patient's assent should be obtained before notifying," thus emphasising the important point that the term "voluntary notification" applies as much to the patient as to the medical practitioner. We are glad also to notice the announcement—"The notification will be treated as confidential and nothing will be done to prejudice the patient's occupation or employment." If notification is to be of service this precaution is absolutely essential. The forms to be filled in by the medical practitioner accompany the leaflet. If the case should prove fatal a notice is sent to those in charge of the patient by the medical officer of health, Dr. J. F. J. Sykes, offering to have the room and the contents of the room previously occupied by the patient disinfected. These suggestions are very complete and those responsible for the issue of the leaflets may be congratulated on having gone into the matter thoroughly. We have on several occasions maintained, however, that more can be done by tuition on the part of the medical practitioner attending the case than by any other means. The St. Pancras borough council materially assists in this duty by sending to practitioners together with the leaflets we have mentioned a pamphlet with the title "How to Prevent Consumption," published by the National Association for the Prevention of Consumption. The distribution of this little publication is likely to prove of considerable value.

THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

THE first International Congress on School Hygiene was held in Nuremberg in 1904¹ and the next congress will meet in London from August 5th to 10th, 1907, with Sir Lauder Brunton as the president. The organising committee meets in the rooms of the Royal Sanitary Institute, Margaret-street, London, W.; Sir Edward Brabrook is the chairman of this committee, Sir Richard Biddulph Martin is the treasurer, and the honorary secretaries are Dr. James Kerr and Mr. E. White Wallis, F.S.S. The organising committee has announced that in order to prepare for the congress the first step to be taken is the formation of a local committee for each particular town or district, which committee should approach the authorities of the Education Department and the Treasury, the leaders of educational movements in town or country, the presidents or chairmen of educational committees, teachers of experience, and medical men in the habit of treating children. These local committees when formed should report forthwith to the London bureau the name and address of the chairmen and secretaries. With regard to the supply of reports and papers for discussion contributions are invited from the representatives of Governments, authorities, societies, or academies, as well as from individuals. It is proposed that besides sectional meetings and lectures there shall be held at least three general discussions and the English committee invites suggestions, to be sent as soon as possible, relative to the subjects under this heading. The subscription for membership (one guinea for the British Empire, five

¹ THE LANCET, April 9th (p. 1011), 16th (pp. 1072 and 1075), and 23rd (p. 1156), 1904.

dollars for America, 20 marks or 25 francs for the continent of Europe) is payable to the English treasurer. For members not resident in England the payment will be best discharged through the national secretaries who will forward it to the general treasurer in London. All communications relating to the school hygiene exhibition, which will be arranged in connexion with the Royal Sanitary Institute, should be directed to the secretary of that institute, Margaret-street, London, W.

THE DRUGGING OF INFANTS.

A CORRESPONDENT draws attention to the following case. A first child, a healthy well-grown boy, was, at the age of five weeks, removed from the care of the monthly nurse and placed in the care of an elderly nurse possessing the very highest recommendations; the infant was bottle-fed. Soon after the arrival of the new nurse the mother noticed that after each bottle the child used to fall into a heavy sleep which was not his usual custom. One evening the nurse before going out prepared the baby's next bottle and left the child in the care of his mother. The mother happened to notice a bottle of white globules in a small cupboard in the nursery, marked "one to be given and if sleep is not produced a second to be given in four hours." The mother took out one of the globules and made a copy of the label and the address. The globule was found to contain white bryony. The druggist selling the globules was interviewed and said that it was a very common drug and that he was often asked for it. During the whole time when this nurse was with the child, about one month, he seemed unable to assimilate his food, suffered from diarrhoea, and decreased in weight. The nurse was at once discharged and although for some three or four weeks there was some difficulty with the baby's digestion he ultimately made a complete recovery and is now a fine healthy boy. Those of our readers who have cases of troublesome diarrhoea in infants under their care may perhaps do well to inquire whether the nurses add anything to the bottle, though it is possible that it would be difficult always to ascertain the truth. Bryony taken internally acts as an irritant and is a drastic purgative. In small doses it has been given to children to stimulate the secretion of the intestinal glands.

FATAL INTESTINAL HÆMORRHAGE IN AMÆBIC DYSENTERY WITH ABSCESS OF THE LIVER.

IN *American Medicine* of Jan. 27th Dr. R. P. Strong, director of the Government Biological Laboratory, Manila, Philippine Islands, has reported four cases of amœbic dysentery with hepatic abscess in which copious and fatal intestinal hæmorrhage occurred. Although in amœbic dysentery the motions often consist almost entirely of blood and mucus the occurrence of intestinal hæmorrhage in such quantity as to prove fatal has been seldom recorded and appears to have received little attention. Sir Patrick Manson in his "Manual of Tropical Diseases" states that whenever in gangrenous dysentery sloughs separate hæmorrhage is possible and collapse may result. Scheube says that occasionally large quantities of pure blood are passed and that even death may result. Professor William Osler remarks that in 12 years seven cases of amœbic dysentery in which hæmorrhage from the bowels occurred were treated in his wards. The following is one of the cases related by Dr. Strong. A man, aged 27 years, came under observation on April 9th, 1904, suffering from chronic amœbic dysentery. He was greatly emaciated. The liver was felt several fingers' breadth below the ribs. The temperature was 100° F. and the leucocytes numbered 15,000. As his general condition was so bad an attempt was made to improve the dysenteric symptoms before operating for hepatic abscess. Quinine enemata and occasional doses of Dover's powder were given.

On the following two days the temperature ranged between 100·2° and 103·2°. Three or four stools, which usually contained a large quantity of mucus, were passed daily. On April 12th two were passed, the last at 3 P.M. At 7 P.M. nearly a pint of fresh blood was passed. At 9 A.M. on the following day a smaller hæmorrhage took place. At 12.30 a large amount of dark blood was passed. Between this time and 8 A.M. on the next day there were five small hæmorrhages. No further large hæmorrhages occurred but the motions consisted of almost pure blood. The patient gradually sank and died. At the necropsy the large intestine was found to contain dark reddish fluid partially clotted blood and mucus. It showed extensive ulceration throughout. The ulcers, as a rule, were shallow and undermined. In the cæcum were deeper ulcers, some of which were gangrenous. The lower end of the ileum was also ulcerated. In the liver were six abscesses measuring from five to ten centimetres in diameter. Some of the hepatic veins contained thrombi. In all Dr. Strong's four cases there were large hepatic abscesses. He therefore suggests that they were connected with the intestinal hæmorrhage. As long ago as 1873 Dr. James Finlayson argued that hepatic abscess by interfering mechanically with the portal circulation produced congestion of the colon and favoured the occurrence of hæmorrhage. In the article on Dysentery in the "Medical History of the War of the Rebellion" Woodward states that "hæmorrhage from the bowels is another occasional symptom of liver abscess and sometimes is the immediate cause of death." This fact seems to have escaped the notice of writers on dysentery.

THE TOXIC ACTION OF WEST AFRICAN BOXWOOD.

Professor R. J. Harvey Gibson¹ has made an examination of a wood which is extensively employed in the manufacture of shuttles in Lancashire under the name West African boxwood. This wood has to some extent taken the place of Persian boxwood during the last two or three years on account of its cheapness. But so many cases of illness occurred among the workmen employed in making shuttles that the matter was brought to the notice of Dr. T. M. Legge, Chief Medical Inspector to the Factory Department of the Home Office. The symptoms complained of were headache, sleepiness, running at the nose and eyes, chronic sneezing, giddiness, faintness, weakness, loss of appetite, shortness of breath, and nausea. The patients also exhibited a pale yellowish or greenish colour on the face and body, accompanied by an odour from the breath and skin resembling that of camphor or Turkey rhubarb. After weeks of intermittent illness these symptoms had, in two or three cases, culminated in death. Professor Harvey Gibson undertook the examination of the botanical characters of the wood and was assisted in the chemical and physiological portions of the work by colleagues in the University of Liverpool. These experiments prove that the wood contains an alkaloid which acts as a cardiac poison, inducing a gradual slowing of the heart-beat and diminution of vigour in the contractile tissue of the heart. As these effects are cumulative serious results are produced after long exposure to the influence of the alkaloid. It is suggested that the fine particles of wood falling on the perspiring skin, more especially of the hands, yield the alkaloid in varying quantity, which so becomes absorbed into the circulation. Dr. Legge found that 32 per cent. of the men engaged in working this wood complained of headache lasting from two to four hours, the pain being described as "over the eyes or at the temples," 11 per cent. complained of drowsiness, 14 per cent. of running at the eyes, and about 29 per cent. of running at the nose. The running of eyes

¹ Bio-Chemical Journal, January, 1905, p. 23.

and rose was not accompanied by ulceration but local inflammation of the mucous membrane was observable. The breathing was affected in 35 per cent. of the cases noted. About 10 per cent. complained of nausea and faintness. In most cases two or more symptoms were found in the same individual.

THE MANAGEMENT OF DELIRIUM TREMENS.

MEDICAL practitioners occasionally have to decide upon some immediate method of dealing with a fairly well-to-do patient who is the victim of delirium tremens and consequently is quite beyond ordinary domestic control and restraint. Since at present there are no homes for the necessary detention of such "temporarily insane" persons admission has to be sought for them in large towns either to a local hospital or to the parochial infirmary. The latter institution receives such a patient as an urgent "mental case." The medical man in charge of the patient or a relative informs the relieving officer, the overseer, or the assistant overseer of the position of affairs and thereby makes the official informed responsible for the patient's welfare. The relieving officer proceeds with an infirmary attendant to the delirious person's house and by stratagem or by force removes him into safe custody. In especially difficult cases the police are instructed to aid the relieving officer in this process of removal; any reasonable dress or coercion exercised is regarded as medically justifiable. If a justice of the peace is available it is wise to secure a reception order from him before the patient is admitted, for what is commonly known as "the detention order" really gives authority "to receive, relieve, and detain." The medical superintendent of the parochial infirmary should at once examine the patient upon admission and record the presence of any bruises upon, or injuries to, the body. Any outlay made by the board of guardians in treating a case so admitted will be charged to the patient or his executors and applied for in due course by the parochial collector of accounts.

THE INTERFERING ACTION OF KREATININ ON FEHLING'S TEST FOR DEXTROSE IN URINE.

Dr. Hugh MacLean draws attention in the *Bio-Chemical Journal* for February to certain sources of error in the employment of Fehling's solution for the detection of dextrose in urine. The presence of kreatinin in urine interferes markedly with the results owing partly to its power of preventing small quantities of dextrose from giving a reaction with Fehling's solution and partly to its power of modifying and making the reaction of dextrose when present in larger amount. The direct reduction of the solution by kreatinin is of comparatively little importance unless it is present to an abnormal extent. Since, according to Volt, kreatinin may be present in normal urine to the extent of three milligrammes per cubic centimetre it is obvious that the presence of pathological amounts of sugar might be masked. The amount of dextrose that may be added to a normal urine without reacting with Fehling's solution varies considerably in different individuals and is influenced by variations in diet. In the case of a healthy adult living on a milk diet the addition of 0.6 per cent. gave a slight precipitate with Fehling's solution; with an ordinary mixed diet a larger addition was required. The presence of kreatinin is the cause of the production of an opalescent greenish milky fluid in certain urines some time after boiling in Fehling's solution. As a rule this change colour is due to the kreatinin present modifying the reaction of dextrose when the latter is present in an amount greater than the average for normal urine. Kreatin appears to act in the same way as kreatinin. Dr. MacLean finds

that many of the greenish liquids obtained on heating urine with Fehling's solution are due to the influence of sugar. He states that the amount of uric acid in normal urine is more than sufficient to react with Fehling's solution in the absence of kreatinin but in its presence in sufficient quantity no reaction ensues. Dr. MacLean's experiments controvert Pavy's theory that ammonia is the substance which interferes with the detection of small quantities of dextrose in urine.

THE MEDICAL SOCIETY OF LONDON.

THE one hundred and thirty-third anniversary dinner was held at the Whitehall Rooms, Hôtel Métropole, London, on Wednesday, March 14th. Sir Lauder Brunton, F.R.S., the President, was in the chair and about 190 Fellows of the society and guests were present. Amongst the guests were Mr. J. Tweedy, President of the Royal College of Surgeons of England; Dr. Donald MacAlister, President of the General Medical Council; Professor T. Clifford Allbutt, Cambridge; the Director-General of the Royal Navy Medical Service; and Dr. J. Kingston Fowler, Dean of the Faculty of Medicine, University of London. The usual loyal toasts having been proposed by the President, Dr. MacAlister proposed "The Medical Society of London." He referred to the proposed amalgamation of the various medical societies and said that he believed that it would be to the advantage of the profession at large that such a movement should succeed. If the Government required any advice on scientific matters the Royal Society was appealed to. On medical matters, however, there was no such recognised body; the proposed "Royal Society (or Academy) of Medicine" would supply the want. Sir Lauder Brunton then referred to the history of the Medical Society and to the vigour which it had acquired during its life of 133 years. He laid stress on the financial stability of the society and also on the value of the library which is now open from 9 A.M. to 6 P.M. He drew attention to the fact that the Medical Society was an offshoot of the Royal Society. As the range of medical science increased many societies dealing with the special branches of medicine were formed. He pointed out the advantages and disadvantages of specialism. He then remarked on the value to be obtained by amalgamation of the various medical societies. At present the Medical Society of London was waiting for definite information on the important question of finance before calling the Fellows of the society together to decide upon the question. The toast of "The Guests" was proposed by Mr. John Langton and responded to by the President of the Royal College of Surgeons of England, the Director-General of the Royal Navy Medical Service, and Dr. J. Sillouville. "The Health of the President" was proposed by Sir William Whitla who dwelt on the valuable scientific work accomplished by Sir Lauder Brunton, more especially in reference to pharmacology.

At a meeting of the National Committee for Great Britain and Ireland of the Fifteenth International Medical Congress, held on March 13th in the rooms of the Medical Society of London, a communication was read from the German National Committee. This communication suggested the formation of an International Bureau which should continue in activity in intervals between the meetings. Another suggestion was that in future the Congress should be held every five years instead of every three. We hope to give the full text of the proposals next week.

A DANCE in aid of the St. George's Hospital Medical School appeal will be held at the Whitehall Rooms, Hôtel Métropole, London, on Wednesday, May 2nd, under the patronage of Princess Christian, Princess Victoria of Schleswig-Holstein, and other ladies well known in society.

Tickets, which are strictly limited in number, may be obtained from the patronesses, or from the honorary secretaries, Mrs. G. R. Turner, 41, Half Moon-street, W., and Mrs. H. D. Rolleston, 55, Upper Brook-street, W.

THE Harveian Lecture of the Harveian Society will be delivered by Dr. J. S. Risien Russell at the society's rooms, Titchborne-street, Edgware-road, W., on March 22nd, at 8.30 P.M. The subject is Myelitis.

ON SOME HETEROGENETIC PROCESSES.¹

BY H. CHARLTON BASTIAN, M.D. LOND., F.R.S.

It may be known only to some present that over 30 years ago I made a long series of investigations on the origin of life question. I ceased to work at the subject in 1876 for a very long period, not because I was convinced that others were right and I was wrong, but because further attention to that question at that time seemed not compatible with my career as a young physician. When, however, I had served for 30 years at University College I resigned my professorship and my physiciancy at the hospital in order that the freedom from teaching and from hospital work might enable me to devote more time and energy to problems which I had apparently relinquished. If my previous work had not impressed me most powerfully I should certainly not have again taken up a subject which the world generally believed to have been settled in a sense adverse to my views. To do so I knew full well would be for long to court neglect.

My first step was to instruct myself in the art of photomicrography in order not to rely on drawings which might be mistrusted. Though photographs are less readily intelligible their freedom from personal bias is of the greatest importance in reference to these questions. Since, during the last six years, I have been devoting all the time I could spare from professional work—mostly in the evening and the early hours of the night—to one side of the subject commonly spoken of as "spontaneous generation." This subject has two aspects—one known as archebiosis, which has to do with the possible synthesis of living matter from its elements, in fluids. That is not the subject about which I am to speak to-night. Since 1876 I have done no work on this part of the subject till the present year, though I shall have soon to announce very startling results in this direction, seeing that I have obtained living bacteria as well as torulae from many closed tubes containing ammoniacal saline solutions which have been heated to 150°C. for 20 minutes. Organisms from two of such tubes, however, I now exhibit as an indication of what is to come later.

The other aspect of the question is known as heterogenesis; and by it is meant the birth of simple alien living things from the substance of higher organisms or their germs. This is the subject at which I have been working of late years and concerning which I am to speak to you to-night. Of course, it will only be possible for me to call your attention, with the aid of some lantern slides, to a few of these processes and to discuss them very briefly. A discussion of numerous other instances, with many more details, will be found in my recently published book on "The Nature and Origin of Living Matter." The first subject to which I shall refer is one of great importance for us.

1. The "*de novo*" origin of bacteria.—The question is, Can bacteria be made to appear where previously they were non-existent? And to this query I say, "Yes." It was strongly held by Pasteur that the cells of healthy plants are germless and this view is still generally regarded as true. Bacteriologists cannot obtain evidence of the existence of micro organisms in cells taken from the centre of a healthy potato or turnip, and yet bacteria can be caused to appear in these situations, although adequate precautions are taken against infection. A small new potato is first well washed in water, then it is put into a screw-top bottle containing a 10 per cent. solution of formalin, and allowed to soak

therein for 20 minutes, the fluid being occasionally shaken so as to cover the whole internal surface of the bottle. The solution is next poured out, leaving the surface of the potato and the bottle wet with the antiseptic fluid, and the cover is tightly screwed on. When this method was employed there was never the slightest indication of any contamination of the surface of the potato, yet when it had been left for a number of weeks in this closed and aseptic bottle micro-organisms were often found (after careful search) within multitudes of closed cells, in sections taken from central regions of the potato but not from peripheral portions which have been acted upon by the antiseptic fluid. Representations of such organisms may be seen in the photographs which I now show. Here, again, is another instance. Some of the cells of a small and previously healthy turnip are seen to be crowded with bacteria. Yet this tuber, having been first well washed, was suspended in a small bottle containing nearly one ounce of pure formalin and the screw cover having been firmly applied the tuber was left in an atmosphere of formalin vapour for seven weeks at a temperature of 80°F.—absolutely free, therefore, from all chances of external contamination.

In all such cases the micro-organisms seem first to show themselves as motionless specks in the primordial tissue of the closed cells and the specks develop into such bacilli as I have shown. The fact that the first things to appear within the closed cells are mere *motionless germs* suffices of itself to negative the possibility of infection. Mere motionless germs could not infect. Vegetable cells can only be penetrated by adult organisms capable of secreting toxins for killing the cells and a cytase for softening their walls. Infecting bacteria must be endowed also with motility in order to be enabled to penetrate the cell wall which they have previously softened, but the motionless germ would be powerless in each of these directions. The only other possibility apart from heterogenesis to account for the appearance of the bacteria within the closed cells would be the supposition that germs of micro-organisms have been latent within the cells. But of this no proof has ever been given. Bacteriologists fail to find evidence of their existence. The verdict of science has, in fact, been adverse to this supposition.

Let us now take another case and one in which the development of bacteria from ultra-microscopic particles can be watched stage by stage. In cyclops, a little water flea, the abdominal appendages are furnished with a number of spines or setae, in the interior of which only structureless protoplasm is to be seen, free from granules. If one of these little creatures is placed in a drop of distilled water on a microscope slip and a covering glass is applied it soon dies, and we may examine some one of the larger spines from day to day. If the specimen is kept in a damp chamber and the weather is warm we may see what the photographs I now show reveal. At first we have protoplasm within the spine free from visible particles; then, after two days, the first appearance of some minute motionless specks which gradually increase in number and size till some of them show themselves as motionless bacilli. About the sixth day some of these bacilli begin to exhibit the first signs of movement and soon we have a seething mass of such organisms in the substance of the spine.

How, again, are we to explain these appearances? The spine has a chitinous envelope which could not easily be penetrated by active full grown organisms, much less by motionless germs, even if these existed in the distilled water. Thus infection from without is here again not to be thought of. We see motionless specks appear and slowly develop into motionless bacilli. To assume the pre-existence in the protoplasm of the spine of multitudes of ultra microscopic germs for no other purpose than to stave off a belief in the *de novo* origin of bacteria is surely neither scientific nor permissible. And yet my critics hint only at latent germs without attempting to offer any evidence of their existence or of any previous belief in this direction. Such pre-existing invisible germs are postulated, in fact, without a tittle of evidence and solely, as I have said, with the view of staving off a conclusion otherwise inevitable. Truth-seekers are thus left with a simple choice: either (a) a belief in the existence of latent germs independently of all evidence or (b) a belief in the *de novo* origin of bacteria on the strength of very cogent evidence.

2. The transformation of small wastes of zoogaea into aggregates of flagellate monads or else into brown fungus germs.—The evidence for heterogenesis to which I

¹ A demonstration, with aid of lantern slides, given on March 15th at a specially convened meeting held at the rooms of the Medical Society, 11, Chandos-street, London, W.

have just been alluding appeals even more to reason than to observation, but that to which I am now about to refer comes more and more within the scope of actual observation. The changes to be observed in zooglœa are best studied in such masses as form on the surface of a weak filtered hay infusion, whose mode of preparation has been elsewhere described. After detailing the manner in which they appear in the scum that speedily gathers on the surface of the infusion a series of photographs was shown in illustration of the transformations which they exhibit. Masses of zooglœa in their early stage were first seen, in which the constituent bacteria were plainly recognisable. The growth of the masses, their alteration in appearance and in reaction to staining fluids, together with the progressive segmentation which they undergo, were revealed by other specimens. Segmentation was shown to progress till minute spherical or ovaloid units were produced. During the first 2-5 days, while these changes are occurring, the masses remain colourless and the ultimate segmentation units develop into flagellate monads or, more rarely, into equally minute amœbæ, myriads of one or of the other of these forms appearing (all of about the same size) where a few hours before they were absent.

Later, from the fifth to the tenth day, the ultimate segmentation units of other of these masses appear as aggregates of brown fungus germs. Often the masses as a whole become brown before segmentation has much advanced and the different stages were shown by which the bacterial aggregates are completely converted into masses of brown fungus germs, together with the development of hyphæ therefrom. All the stages in the complete conversion of the zooglœa masses into monads or amœbæ, in the one case, or into brown fungus germs, in the other, are clearly recognisable, though it is impossible to say from the appearance of the masses in their early stages which of these three interchangeable forms of life will ultimately be produced.

The notion that infection can account for these changes is, I think, absolutely untenable. All the changes by which the aggregates of bacteria are metamorphosed into monads or amœbæ, or into fungus germs, can be followed step by step in thousands of these little masses of zooglœa lying side by side, when no monads or brown fungus germs are to be seen around and when not a single hypha is to be met with on which such germs could have been formed. What, it may be asked, could be the meaning of the developmental changes and the progressive segmentations unless such processes are the result of an organising tendency destined to have some definite outcome? Why, again, should the zooglœa or its segments so often tend to assume a brown colour, while it is still nothing but zooglœa, if this is not one of the stages of change for the production of brown fungus germs? Chemical changes in the fluid seem to determine whether the products of segmentation are to issue as monads or amœbæ in the early days of the life of the scum; while other chemical changes occurring rather later lead the zooglœa masses to assume a brown colour and cause them to go on to the production of brown fungus germs. These changes can fortunately be observed by others with the greatest ease and if carefully studied would, I feel assured, soon bring conviction even to the most sceptical investigator.

3. *The origin of different ciliated infusoria from the eggs of a rotifer.*—I now pass to other transformations still more remarkable and still more impossible of receiving any explanation as results of infection on account of the size of the masses of living matter the stages of whose change can be traced. The products in this case appear as ciliated infusoria of one or other kind according as the egg undergoes transformation as a whole or only after it has segmented into a number of smaller masses. The egg or gemma that in certain cases can be made to undergo these changes is that of Hydatina, the largest of the rotifers. It constitutes a mass of granular protoplasm averaging about $\frac{1}{32}$ inch in diameter. After a long series of investigations with these eggs I found that certain batches of them if placed soon after they had been laid in small, covered stone pots full of water would in part yield Hydatina and in part a great embryo ciliate of Hydatina takes place very rapidly and when the eggs have continued notwithstanding this or other great change to which they are subjected. It is the eggs that have only just morphed by being put in the absolutely dark and comparatively shallow pots. The changes that occur under these

conditions were illustrated by a series of photographs showing first the normal egg and the young Hydatina that should come from it, and then the stages by which the whole of the egg mass is transformed into a great ciliated infusorium which ultimately begins to revolve, before bursting through its egg-case. The organism has a small ear-like mouth which is the principal character showing it to belong to the genus *Ostotoma*.

As regards the reality of this transformation, doubt seems impossible for the following reasons. The ciliate is an extremely rare one and up to the time of my having made the foregoing observations I had never once met with it in association with euglenæ and Hydatina, though during the course of these investigations I had taken hundreds of such ciliates from my experimental pots. In batches of from 30 to 40 Hydatina eggs placed in the pots I have several times found at the expiration of three or four days from 15 to 25 per cent. of the egg cases occupied by a great ciliate instead of by a Hydatina, while when similar batches of eggs were placed in an open watch-glass exposed to light not a single one of these ciliates would appear. There are only two possibilities of error, each of which may be easily dismissed. There is first the doubt that ever recurs—viz., the possibility of infection. But germs of ciliates are unknown to science; and even if germs of *Ostotoma* did exist and one of them was in the habit of getting into the rotifer's egg it would have to devour absolutely the whole of the contents of the egg since, as we have seen, the ciliate, on emerging, leaves nothing but the egg-case. During such a process any growing and developing ciliate could by no possibility hide itself; but, as a matter of fact, no movement is ever seen within the egg till the whole mass begins slowly to revolve anterior to its emergence as a ciliate. The doctrine of infection, therefore, utterly breaks down.

The only other possibility of error is this—that what I have been taking for eggs of Hydatina have in reality been encysted *Ostotomata*. That is, to say the least, not likely; and, like the last attempted interpretation, this also assumes the frequent co-existence of these organisms with Hydatina, whereas they are only to be met with on extremely rare occasions. Twice only have such organisms been found by me leading a free life in association with Hydatina, and only one "find" of these organisms in this country is cited in Saville Kent's "Manual of the Infusoria." Up to the time of my making the foregoing observations I had never met with them in a free state, so that they had never been found in sites in which for a period of eight or nine months and previously I had been obtaining my supplies of Hydatina. When, subsequently, they were found in the free state I realised that the organisms which were produced from the Hydatina eggs (notwithstanding their great size) were only embryos, which in their mature state were capable of attaining a bulk three or four times as great. A small specimen of these free-living *Ostotomata* may now be shown, in which the characteristic mouth and great nucleus are discernible; while two other slides reveal such organisms in their encysted condition, and show the impossibility of confusing these larger and totally different objects with the eggs of Hydatina. Neither possible source of error can, therefore, be admitted, and we must perforce acknowledge that the *Ostotomata* have been derived from the eggs of the rotifer, and by such stages as are shown in the photographs.

At other times, in the dark pots the contents of the egg are found to have divided into 12-20 smaller spherical masses, such as are now shown. These become individualised and transformed into embryo ciliates, sometimes belonging to the genus *Oxytricha* and at others to that of *Vorticella*. So long ago as the spring of 1872 I first saw this transformation into *Oxytricha*, when many of the embryos were seen revolving within their own special cysts, while still inclosed within the unbroken egg-case of Hydatina. A note then made says: "Some of this batch of rotifer's eggs were seen to be filled with such spherical masses, whilst others were observed in which a few of the embryos had escaped from their cysts and were swimming about as well-marked specimens of *Oxytricha* within the thin investing membrane of the rotifer egg." On two other occasions of late years, and each time in the spring, I have seen this transformation into a brood of young *Oxytricha*, while on another occasion the little spheres into which the egg substance had divided were all transformed into embryo *Vorticellæ*. One of these latter eggs is now shown containing

about 20 spherical masses, in which the egg-case is still intact, and also another damaged specimen which was found close to it. All the stages in the development of the contained embryos were traced, till they produced such young vorticellæ as are now shown among the empty egg-cases of the hydatina. The occurrence of infection is here again an impossible one. Germs of these ciliates are unknown, and no moving thing is ever seen within these intact egg-cases of hydatina till the little embryos become roused into active life, each within its own special cyst.

We have here, therefore, facts of an astounding nature, seeing that no sort of kinship is known to exist between the comparatively complex rotifers and the unicellular organisms into which their eggs are transformed; and seeing, further, that totally different forms of ciliated infusoria are produced from the egg substance of the hydatina, according as it becomes transformed as a whole or only after having undergone segmentation into a varying number of small spherical masses.

These latter facts cannot but recall the varying product—which, as I have shown, are also yielded by apparently similar masses of zooglæa; and such facts, together with the many other similar heterogenetic transformations which I have traced, and elsewhere described, compel me to believe that the forms of these lowest living things are as much the natural outcome of the polarities of their molecules—the “physiological units” of Spencer—as the varying forms of crystals are the necessary results of their intrinsic polarities under the conditions in which they are formed.

We know that these lower living things are most mutable and sensitive to changes in their medium, yet the accredited biological doctrines of the day ask us to believe, on the one hand, that all the forms of life that have ever lived have been derived from primordial forms which were first evolved untold ages ago upon the cooling surface of our planet; and, on the other hand, we are asked to believe that bacteria, monads, amœbæ, ciliated infusoria, and multitudes of other lowest forms of life which are found to teem in all kinds of situations at the present day have resisted change and have been perpetuating their like during æons and æons of time. I must confess that this seems to me nothing less than an absurdity. Logic and the uniformity of natural phenomena would seem to negative the idea of an isolated and therefore miraculous origin of life. If archebiosis, or at all events processes of heterogenesis, such as I have been describing, occur now and have been ever recurring we get an explanation of the continued existence at the present day of the lowest forms of life all over the surface of the earth, the reason for which would otherwise be absolutely unintelligible from the point of view of the doctrine of evolution.

At this late hour I can only hint at the importance of these views for medical science. Recognition of the *de novo* origin of bacteria does not tend to contradict any of the great body of bacteriological doctrine which has been built up during the last 30 years. It only tends to open the door rather wider and to put a reasonable check upon ultra-contagionist doctrines. There are indications, indeed, that the more philosophic bacteriologists are beginning to recognise the need of more moderation in this direction when we find Lehmann and Neumann, for instance, saying in their “Principles of Bacteriology,” “The division of bacteria into pathogenic and non-pathogenic, etc., as is still always done in text-books, has failed absolutely. We can understand and know the pathogenic varieties only if we study simultaneously the non-pathogenic, from which the former have once originated and still always originate.” How much more, then, will it come to be recognised when the *de novo* origin of bacteria is generally admitted that we have to think of the origins of contagious diseases in the present day, instead of postulating the occurrence of such origins as possible only in a “remote geological past” about which we know nothing.

3 Translation of second edition, 1901, pp. 116-119.

HEALTH OF ILFRACOMBE.—Dr. E. J. Slade-King, medical officer of health of Ilfracombe, in his annual report for 1905 states that the death-rate was 11.5 per 1000 and this was the average from 1901 to 1904. The birth-rate was 17.3 per 1000. The infantile mortality was 84.9 per 1000. Dr. Slade-King describes the water-supply as constant and ample.

A NEW MICROBE, PATHOGENIC FOR RODENTS, BACILLUS EQUI.

By E. KLEN, M.D., F.R.S.

Mr. Charles J. Humphrey, M.R.C.V.S., veterinary inspector submitted to me a sample of blood of a horse that he suddenly died from an unknown cause. Mr. Humphrey had examined the blood of the animal with a possible view of detecting bacillus anthracis, but he failed to do so. Being anxious to have the diagnosis confirmed or negated in order to have the required administrative regulations carried out he asked me to examine the above sample of blood. The animal—a private carriage horse—had been in the owner's possession for two and a half years and had not been laid up ill during that period. The horse was at work in the afternoon, returning to the stable at 5 P.M., and died at 7.45 P.M. the same evening.

The following were the chief symptoms at the post-mortem examination made by Mr. Humphrey. There was blood about both nostrils and the abdomen was swollen; the mesentery was inflamed in patches, with blood extravasations there were inflammatory patches along the large bowels; the vessels were congested with extravasations, the mesenteric blood-vessels were engorged, and the lungs were congested. My best thanks are due to Mr. Humphrey for supplying me with the preceding notes. Film specimens of the blood showed a great many small and large groups of bacilli in these groups there were some not larger than a coccus; others long cylindrical, and all intermediary forms. From this it was therefore evident that Mr. Humphrey's preliminary diagnosis, “Not anthrax,” was correct. I injected subcutaneously in the groin of a guinea-pig (1) with a fair dose of the blood—about 0.1 cubic centimetre. The guinea-pig developed a soft swelling in the groin and on the abdomen of the injected side but on the fourth day seemed quite lively. The animal was killed and on post-mortem examination showed about the seat of injection gelatinous infiltrations from which a large amount of turbid sanguineous fluid oozed out. Under the microscope the fluid, besides containing blood corpuscles, was crowded with short bacilli some free, others in groups, some almost spherical, like cocci, others longer or shorter cylindrical; they were non-motile, gram negative. Cultures: surface agar plate, agar tube, and gelatin tube proved that the fluid contained one species only of microbes, non-motile, gram negative, from 0.8 to several micromillimetres in length, in shape of all forms intermediate between coccus-like and cylindrical up to several μ . It was therefore quite clear that this result negated anthrax. All the viscera of the above guinea-pig appeared to be normal. With a single colony from the above agar plate injected subcutaneously in the groin of a further guinea pig (2). Next day this animal showed a soft slight swelling about the seat of injection. After another day the swelling had slightly increased, but the animal seemed quiet and off food. Four days after the injection it was in a dying condition. The post-mortem examination showed the following appearances: locally there was slight oedema and congestion; the spleen was enlarged and dark; on the parietal pericardium and the mediastinal pleura there were purulent pseudo-membranes; the lungs were much congested. Films and specimens of the pseudo-membranes showed, besides the leucocytes constituting the pseudo-membrane, crowds of the bacilli, many intracellular, others free. In shape, size, and staining they were of the same characters as those used for the injection. Cultures made of a trace of the pseudo-membrane yielded pure cultures of the same species. Film specimens and cultures of the spleen showed great abundance of the same microbes. The heart's blood contained the microbe but not less in numbers, platinum loop of the blood yielding an almost confluent mass of colonies. With a single colony from an agar plate of the heart's blood of this guinea pig injected subcutaneously one large rabbit. The animal died four days after; it had local inflammation, thin pseudo-membranes on the liver and an enlarged spleen, thin pseudo-membranes on the mediastinal pleura and the pseudo-membranes of the liver, the spleen, and the pleura showed membranes of the liver, the spleen, and the pleura showed a film specimens and culture abundance of the bacilli; a similar result was obtained with tissue of the spleen; the heart's blood also contained great abundance of the bacilli. From these experiments it follows that the original blood

of the horse contained abundance of a microbe which proved pathogenic and fatal to the guinea-pig and through this to the rabbit, the microbe in small doses (a single colony) causing death in four days with pseudo-membranes on the viscera, with abundance of the same microbe in the pseudo-membranes, the heart's blood, and the spleen. The microbe, for which I propose the term "bacillus equi" resembles in shape and size the bacillus pseudo-tuberculosis (A. Pfeiffer), possessing all intermediate shapes between a coccus and a cylindrical, almost filamentous bacillus and being non-motile and not liquefying gelatin, but in action it obviously differs from it, the former causing acute illness and not producing the well-known necrotic nodules in the spleen, the liver, the lung, and the lymph glands characterising the action of the bacillus pseudo-tuberculosis. The bacillus equi grows well at 37° C. and at from 20° to 21° C. it forms round, more or less flat, moist, translucent colonies both on agar and on gelatin: it grows slower and is distinctly more translucent than bacillus pseudo-tuberculosis. The bacillus equi is practically gram negative; the oval forms, both of culture and of the animal tissues, show bipolar staining with methylene blue. The bacillus equi does not alter neutral red broth, litmus milk, lactoseptone, or litmus glucose bile salts (MacConkey fluid). In alkaline beef broth it forms slight but uniform turbidity; no pellicle. Bacillus pseudo-tuberculosis leaves the fluid fairly clear but forms copiously granules and flocculi with pellicle on the surface (where the fluid touches the glass). The bacillus equi does not form spores and is sterilised by complete drying. Dr. Mervyn H. Gordon has kindly subjected in comparative series both the bacillus equi and the bacillus pseudo-tuberculosis to the various sugar tests and he finds as the chief and constant differences that while bacillus pseudo-tuberculosis forms acid from maltose and not from saccharose the bacillus equi behaves in a contrary way, inasmuch as it forms acid from saccharose but not from maltose.

As already mentioned, the action of the bacillus pseudo-tuberculosis and of the bacillus equi is fundamentally different. As a further distinction may be mentioned the fact that while bacillus pseudo-tuberculosis retains its pathogenic action unimpaired in subcultures after many months' transference the bacillus equi rapidly loses its virulence in subcultures. The microbe of fowl cholera, with which the bacillus equi has certain morphological and cultural characters (including indol formation in broth) in common, differs from our microbe in (a) the bacillus of fowl cholera is virulent for mice and non-virulent for guinea-pigs, the bacillus equi is virulent for the guinea-pig and non-pathogenic for mice; and (b) the bacillus of fowl cholera curdles milk and reduces litmus and the bacillus equi does neither, milk remains fluid and litmus unchanged.

St. Bartholomew's Hospital.

CRIER AND WIFE v. HOPE AND CURRIE.

(Specially reported for THE LANCET.)

In the King's Bench Division on March 2nd, 5th, 6th, 7th, and 8th, before Mr. Justice A. T. LAWRENCE and a special jury, Mr. William Fletcher Crier, an estate agent residing at Greenford, near Ealing, and his wife, Mrs. Mary Crier, sued Mr. George Hope and Dr. George Burnett Currie, partners, practising in Ealing and neighbourhood, for damages, alleging that by reason of the latter defendant's negligence Mrs. Crier had become infected with scarlet fever during her confinement. Mr. GILL, K.C., and Mr. A. FARLEIGH represented the plaintiff; Mr. MCALL, K.C., and Mr. NELSON appeared for the defendants, who denied the charge of negligence.

In opening the case Mr. GILL stated that the plaintiffs were married early in 1903 and went to Greenford in 1904. The husband engaged Dr. Currie to attend his wife in her second confinement, which took place on Nov. 15th, 1904. No complications took place until Nov. 18th, when the patient's temperature began to rise, eventually reaching 105° F. On the following day a scarlet rash appeared on the body in addition to a sore-throat and on Nov. 20th Dr. Currie pronounced Mrs. Crier to be suffering from scarlet fever. Her condition for a time was very critical. Dr. Currie said that neither he nor his partner had any fever patients in their practice and therefore he could not account for the origin of

the infection. This statement was untrue. Though there was no suggestion of lack of skill on Dr. Currie's part he (counsel) maintained that if a medical man attended an infectious case and then went to a confinement he did so at his own risk.

The first witness called was Miss SUSAN BROWN, a certificated nurse, who attended Mrs. Crier in 1903 for her first confinement and also in November, 1904. The witness stated that the latter confinement was normal save for a slight rupture of the perineum which required one stitch. The defendant, Dr. Currie, washed his hands in water, then corrosive sublimate, and lastly in lysol prior to examining the patient. He also removed his coat and was supplied with an apron. He used a nail-brush. "White leg" was a complication. Mrs. Crier had suffered for some time previously from varicose veins. On Christmas Day Mrs. Crier's condition had so much improved that she was allowed up, but the next day she had a relapse which was followed by three rigors on Dec. 30th, Jan. 6th, and Jan. 11th. On Jan. 18th Dr. G. E. Herman was called in and opened a pelvic abscess, recovery following, though nurses were in attendance until April. The witness stated that she asked Dr. Currie in November as to the source of the infection and that he had replied, "I have not had a fever case for some time."

Mr. CRIER stated that on his arrival Dr. Currie removed his overcoat and muffler. After scarlet fever had been diagnosed Dr. Currie stated he "was not attending any fever cases" and was at a loss to account for it. Mrs. Crier's illness was notified on Nov. 21st and on the following day Mr. Hope, the medical officer of health, called and made inquiries of the witness. Dr. Currie's statement was repeated to his partner who expressed the opinion that he (Dr. Currie) could not have properly understood the query for he (Dr. Currie) was attending infectious cases. This interview was recounted to Dr. Currie who remarked, "He is a funny chap; you may take it from me that I have not had any." The witness stated that he had had inquiries made, with the result that he learnt that Dr. Currie had certified patients as suffering from scarlet fever on Oct. 15th and 17th, and Nov. 14th and 15th. When confronted with this evidence Dr. Currie is alleged to have observed, "What is a doctor to do?" The plaintiff stated that his claim for special damage amounted to £500, incurred by out-of-pocket expenses and loss of business, the latter being brought about by his constant and necessary attendance at home.

Cross-examined, he stated that he kept three servants, procured his goods from Harrod's Stores, and his milk from a neighbouring farm. He went to business at Oliswick partly by train and electric tram.

Mrs. MARY CRIER said that she was a nurse for five years prior to her marriage. Directly Dr. Currie came into her room on Nov. 15th, some time about 7 or 8 P.M., he shook her hands prior to washing his own. He told her that he had no fever cases on her inquiring as to the source of her infection. After her first confinement in 1903 she had been in indifferent health.

Mrs. ELIZABETH MILLER, a labourer's wife, stated that Dr. Currie visited her two children who were suffering from scarlet fever on Nov. 15th, about 6 P.M.

Dr. CHARLES ERNEST GODDARD, medical officer of health of Wembley, and Mr. HERBERT EDWARD COUNSELL, of Oxford, gave evidence and deemed it unwise for medical men to attend cases of confinement within so short a period as Dr. Currie had done after visiting a scarlet fever case, "even after taking proper precautions." It was a risk that members of the profession should not run except in the greatest emergency. The latter witness thought the septic trouble which culminated in the pelvic abscess to be due to the scarlet fever infection.

Mr. MCALL, in outlining the defendants' case, remarked upon the amount of prejudice that had been introduced into the case. The only questions for the jury to consider were: (1) Did Dr. Currie convey infection to Mrs. Crier? and (2) Did he as a medical man in the circumstances exercise reasonable care?

In his evidence Dr. CURRIE stated that he visited the Millers' house on Nov. 15th but had no necessity to touch the boy, having diagnosed his condition on the previous day. Returning home he found a telegram summoning him to Greenford. Thereupon he washed and disinfected his hands and arms with lysol and changed his coat prior to driving the two and a half miles to Greenford. Before examining Mrs. Crier he had thoroughly disinfected himself as stated by Nurse Brown. He also used rubber sleeves to cover his shirt.

These had been sterilised previously by boiling. He denied the statements he was alleged to have made to Mr. and Mrs. Orier and Miss Brown. What he said to the husband was, "At present I am not attending any case nor do I know of one in Hanwell." He diagnosed the "white-leg" complication on Nov. 29th. He did not consider it was brought on by sepsis as stated by the plaintiffs' medical witnesses. He considered the patient's relapse after Christmas to be wholly distinct from the scarlet fever—only a local disturbance. He thought it practically unnecessary to request another medical man to take the confinement case for him. Between Nov. 15th and Feb. 3rd he had attended 32 confinements and had paid 311 ordinary visits. None of these had developed scarlet fever.

Cross-examined, Dr. CURRIE said he had told Mr. Orier the truth—though perhaps not the whole truth. He would call it an equivocation. In November he and Mr. Hope were not on speaking terms, both being desirous of dissolving the partnership. The medical profession drew a distinction between "attending" and "seeing" a patient, but the witness admitted that there was no difference in the risk. The septicæmia which Mrs. Orier suffered from was not puerperal.

Dr. HERMAN thought that Dr. Currie had taken all the precautions necessary. He did not consider the pelvic abscess which he opened on Jan. 18th, 1905, was due to the scarlet fever infection. Neither did he agree with Dr. Galabin's dictum that parturient women were more liable to become infected by the fever. The septicæmia was not of the puerperal variety.

Dr. WILLIAM HUNTER, physician to the London Fever Hospital, agreed generally with the evidence given by the last witness. In his opinion medical men did not carry infection. He admitted the possibility of the connexion between the scarlet fever in November and the later trouble in January.

Cross-examined he said that changing clothes and the taking of a bath were reasonable precautions but thorough disinfection was the essential factor.

Mr. LEWIS DRANSFIELD BROWN, visiting physician to the Ealing Isolation Hospital, considered the precautions taken by Dr. Currie to be reasonable.

Professor HERBERT R. SPENCER, obstetric physician to the University College Hospital, considered the precautions taken by Dr. Currie effective. He agreed with the suggestion that there might be sometimes a connexion between "white leg" and scarlet fever, but in the present case the predisposition possessed by the patient to varicose veins would probably exclude scarlet fever as being the cause of the "white leg."

Dr. WALTER SMITH considered the precautions taken sufficient. He stated that if a medical man thought there was the slightest risk to his patient he ought to get another medical man to go to the confinement. He offered the opinion that pork was a frequent carrier of scarlet fever.

The learned JUDGE, in the course of his summing up, said that the public were not entitled to expect more than ordinary and reasonable care from a medical man. An exceptional standard of skill could not be required. The questions for the jury's decision were those put to them by the defendants' counsel. In his opinion it was very much akin to "straining at a gnat," to lay it down as a rule that a medical man, aware that he had been engaged for a confinement—the date of which was by no means certain—should refrain from visiting other patients. As regards the conveyance of infection Mr. Gill had treated it as a certainty, but from the evidence given on both sides the only certain fact seemed to be that one person could convey it to another. It was quite possible in the present case that the patient might have derived the infection from other sources than from the medical man, for it had been stated that an epidemic was at the time "raging in the neighbourhood." Besides, the mere fact that they (the jury) thought Dr. Currie communicated the infection was not sufficient in itself to make them come to the conclusion that he had not taken due care. He failed to see any reason for a medical man to inform a husband of his attendance upon an infectious case prior to attending the wife, for in his (the medical man's) opinion he had taken steps to render himself free from the risk of carrying infection. To his (the judge's) mind to go and tell the patient or friends was displaying a lack of self-respect and courage. Neither did he consider it an act of negligence for a medical man not to call in another practitioner. Dealing with the

contention that Dr. Currie should have completely changed his clothes the judge opined that it was very impracticable, supposing an epidemic was prevailing. The alleged conversations were important if they went to show that Dr. Currie was conscious that he had been less careful than he ought to have been and was therefore less candid to Mr. Orier about the scarlet fever cases which he had attended. Continuing, his lordship said that all the evidence given by the witnesses went to show that lying-in women were not more liable than others to scarlet fever infection. This had a strong bearing on the subject of proper precautions if the defendant adopted this view in taking precautions before going to a confinement. His lordship said that contrary views had been cited from text-books, written by living authors, on behalf of the plaintiffs but such opinions were not evidence.

The jury found a general verdict to the effect that "Dr. Currie had taken the usual precautions."

Mr. GILL asked his lordship to request the jury to answer the question as to whether Dr. Currie had not committed a legal assault upon Mrs. Orier on or about Nov. 20th, 1904, by examining her after leading her to believe he was not attending any scarlet fever patients.

After some deliberation the jury intimated their inability to agree and were discharged.

Mr. MCALL: I ask for judgment for the defendants.

HIS LORDSHIP: Yes.

Mr. FARLEIGH: Is your lordship going to separate the claims, the jury having disagreed upon one part?

HIS LORDSHIP: On reflection I do not think I ought to have allowed the second question to go to the jury. A stay of execution with view to an appeal will be granted on the usual terms.

Looking Back.

FROM

THE LANCET, SATURDAY, March 15th, 1828.

FOREIGN DEPARTMENT.

*MM. BRESCHET and RASPAIL have lately been engaged in investigating the structure of the nerves, with a view to ascertain whether there were canals, according to the opinions of the late M. Bogros, permeating their centre or not? The conclusion at which these anatomists have arrived is, that there are no canals in the centre of the nerves, and consequently that it is not by virtue of any fluid contained in them that the powers of sensation and voluntary motion are performed. In all the cases where the attempt was made to inject mercury into the nerve, this fluid either escaped between the loose cellular membrane and the neurilemma, or the neurilemma and the nerves; and in no instance continuously through the centre of the nerve.

As JOE BURNS was bustling through the streets one day this week, he was overtaken by an old colleague, who, after the usual friendly salutation, complimented him on his late success in joke and pun. "Mere trifles, Sir," said JOE, "struck off at the moment; cost me no trouble; not worthy of your attention." It was soon apparent that the friend was quizzing, and that he did not believe JOE to be the real author of the good things that pass under his name. The latter was nettled at this; for, though very good natured, and affecting indifference on the point, he is extremely sensitive whenever his reputation as a wit is called in question. "Well," said the friend, "you may easily settle the point; make a joke directly; if it be good, I will give up my doubts, and the effort shall not be lost." JOE took him at his word, and said with incredible promptitude, "Tell me, Sir, why Ben Travers is like the 'glorious orb of day.'" This apparently incongruous comparison of the source of light to the great master of the dark style, completely puzzled the doubter; the more he reflected on the unfathomable depths of this profound author, the less was he able to discover in him the likeness of anything luminous, and he soon gave up the attempt. "Why," said JOE, with a look of exultation over the confounded sceptic, "did not Ben rise in the east, and has he not gone down in the west?"

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8849 births and 5076 deaths were registered during the week ending March 10th. The annual rate of mortality in these towns, which had been 17.2, 17.3, and 17.4 per 1000 in the three preceding weeks, declined again to 16.7 per 1000 last week. In London the death-rate was 16.2 per 1000, while it averaged 17.0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6.0 in Barrow-in-Furness, 9.6 in Hornsey, 9.7 in Craydon, 10.7 in West Hartlepool, 10.9 in Ipswich, 11.3 in Willesden, 11.4 in Handsworth (Staffs.), and 11.5 in King's Norton; the highest rates were 21.1 in Newport (Mon.), 21.3 in Boodle, 21.6 in Merthyr Tydfil, 22.0 in Brighton and in Preston, 22.6 in Liverpool, 24.1 in Warrington, and 29.9 in Tynemouth. The 5076 deaths in these towns last week included 469 which were referred to the principal infectious diseases, against 446, 388, and 420 in the three preceding weeks; of these 469 deaths 156 resulted from measles, 134 from whooping-cough, 60 from diphtheria, 51 from diarrhoea, 43 from scarlet fever, and 25 from "fever" (principally enteric), but not any from small-pox. No deaths from any of these principal infectious diseases were registered last week in Hastings, Burton-on-Trent, Walsall, Birkenhead, Warrington, Rochdale, Burnley, or Rotherham, while they caused the highest death-rates in Tottenham, East Ham, Southampton, Plymouth, Derby, Liverpool, Middlesbrough, and Newcastle-upon-Tyne. The greatest proportional mortality from measles occurred in Tottenham, Leyton, Walthamstow, Plymouth, Liverpool, Bury, Preston, Leeds, Newcastle-upon-Tyne, and Swansea; from scarlet fever in Wolverhampton and West Hartlepool; from whooping-cough in Southampton, Reading, Plymouth, Handsworth (Staffs.), Birmingham, King's Norton, Leicester, Gateshead, and Newcastle-upon-Tyne; from "fever" in Wigan; and from diarrhoea in Barrow-in-Furness, Middlesbrough, and Newport (Mon.). The mortality from diphtheria showed no marked excess in any of the large towns and no fatal case of small-pox was registered during the week. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been two, five, and six at the end of the three preceding weeks, was again six at the end of last week; one new case was admitted during the week, against two, three, and one in the three preceding weeks. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital was 2545 on Saturday, March 10th, against 2734, 2689, and 2628 on the three preceding Saturdays; 268 new cases were admitted during the week, against 281, 274, and 273 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 289, 328, and 343 in the three preceding weeks, declined again to 314 last week, and were 100 below the corrected average number in the corresponding periods of the four preceding years. The causes of 67, or 1.3 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Leeds, Hull, and 44 other smaller towns, while the largest proportions of uncertified deaths were registered in Hanley, Burton-on-Trent, Birmingham, Grimsby, Liverpool, St. Helena, Manchester, Blackburn, Preston, Sheffield, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18.0, 19.6, and 19.3 per 1000 in the three preceding weeks, further declined to 18.2 per 1000 during the week ending March 10th, but was 1.5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13.8 in Paisley and 14.9 in Aberdeen to 22.7 in Perth and 22.8 in Dundee. The 622 deaths in these towns last week included 23 which were referred to measles, 11 to diphtheria, ten to whooping-cough, in all, 57 deaths resulted from these principal infectious diseases last week, against 64, 54, and 61 in the three preceding weeks. These 57 deaths were equal to an annual rate of 1.7 per 1000, which was slightly above the mean rate last week from the same diseases in the 76 large

English towns. The fatal cases of measles, which had been 34, 28, and 26 in the three preceding weeks, further declined to 23 last week, and included ten in Glasgow, six in Edinburgh, four in Paisley, and two in Dundee. The deaths from diphtheria, which had been nine, two, and six in the three preceding weeks, further rose last week to 11, of which seven occurred in Glasgow. The fatal cases of whooping-cough, which had been ten in each of the two preceding weeks, were again ten last week and included seven in Glasgow and two in Dundee. The deaths from diarrhoea, which had been ten, five, and 14 in the three preceding weeks, declined again last week to seven, of which four occurred in Glasgow and two in Dundee. The fatal cases of "fever," which had been six and three in the two preceding weeks, rose again to four last week and included two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 134, 125, and 153 in the three preceding weeks, declined again to 125 last week, and were 28 below the number in the corresponding period of last year. The causes of 17, or nearly 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19.0, 24.4, and 24.8 per 1000 in the three preceding weeks, declined again to 24.6 per 1000 during the week ending March 10th. During the past four weeks the death-rate has averaged 23.2 per 1000, the rates during the same period being 16.8 in London and 16.8 in Edinburgh. The 179 deaths of persons belonging to Dublin registered during the week under notice were slightly fewer than the number in the preceding week and included six which were referred to the principal infectious diseases, against six in each of the two preceding weeks; of these, three resulted from diarrhoea, two from diphtheria, and one from whooping-cough, but not any from small-pox, measles, scarlet fever, or "fever." These six deaths were equal to an annual rate of 0.8 per 1000, the death-rates last week from the principal infectious diseases being 1.5 in London and 1.4 in Edinburgh. The 179 deaths in Dublin last week included 25 of children under one year of age and 58 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were slightly in excess of the respective numbers recorded in the preceding week. One death from violence and two inquest cases were registered; and 78, or more than two-fifths, of the deaths occurred in public institutions. The causes of six, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1906.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6.4 per 1000 of the population, estimated at 4,721,217 persons in the middle of the year. In each of the two preceding months the rate had been 6.7 per 1000. The lowest rates last month were recorded in Paddington, Kensington, Hammersmith, Hampstead, and Stoke Newington; and the highest rates in Hackney, Southwark, Bermondsey, Deptford, Wandsworth, Greenwich, and Woolwich. Six cases of small-pox were notified last month; of these three belonged to Stepney, two to Hackney, and one to Bethnal Green. The prevalence of scarlet fever last month continued to show a slight decline from that recorded in other recent months; among the various metropolitan boroughs this disease was proportionally most prevalent in Finsbury, Southwark, Bermondsey, Lambeth, Wandsworth, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 2580 scarlet fever patients at the end of last month, against 3976, 3410, and 2856 at the end of the three preceding months; the weekly admissions averaged 271, against 449, 318, and 296 in the three preceding months. Diphtheria was rather more prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, Poplar, Bermondsey, Wandsworth, Greenwich, Lewisham, and Woolwich. The number of

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1906.
(Specially compiled for THE LANCET.)

CITIES AND BOROUGH.	Estimated population in the middle of 1905.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.														
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhoea.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON...	4,731,217	6	1212	629	—	89	2	28	329	—	2325	6'4	—	175	36	65	142	—	16	—	62	496	1'4	5743	15'9	118
West District.																										
Paddington ...	148,913	—	15	14	—	—	—	1	9	—	39	3'4	—	—	1	2	—	—	2	—	2	7	0'6	140	12'3	83
Kensington ...	180,952	—	16	21	—	2	—	1	9	—	49	3'5	—	10	2	3	2	—	—	—	2	19	1'4	188	13'5	119
Hammer-smith ...	120,679	—	10	20	—	3	—	2	6	—	41	4'4	—	10	—	3	1	—	—	—	3	17	1'8	161	16'3	172
Fulham ...	161,985	—	33	25	—	1	—	1	9	—	69	5'6	—	6	2	3	1	—	1	—	3	16	1'3	163	13'1	135
Chelsea ...	74,672	—	11	9	—	1	—	—	6	—	27	4'7	—	4	1	2	—	—	—	—	1	8	1'4	85	14'8	81
City of Westminster ...	173,905	—	36	23	—	6	—	3	14	—	82	6'1	—	2	1	2	3	—	—	—	1	9	0'7	160	13'5	118
North District.																										
St. Marylebone ...	126,580	—	22	9	—	2	—	—	12	—	45	4'6	—	1	1	1	3	—	—	—	2	8	0'8	166	16'8	92
Hampton ...	89,633	—	13	3	—	—	—	—	—	—	16	2'3	—	—	—	1	—	—	—	—	—	1	0'1	83	12'1	135
St. Pancras ...	226,455	—	60	16	—	7	—	—	14	—	97	5'3	—	5	3	1	12	—	1	—	—	22	1'2	369	17'0	113
Islington ...	344,937	—	83	31	—	4	—	4	10	—	138	5'2	—	19	3	4	4	—	1	—	—	31	1'2	426	16'1	110
Stoke Newington ...	53,217	—	7	2	—	—	—	—	4	—	13	3'2	—	2	—	—	3	—	—	—	—	5	1'2	44	10'8	97
Hackney ...	220,721	2	76	25	—	9	—	—	27	—	139	7'9	—	3	—	2	4	—	—	—	1	10	0'6	236	13'3	103
Central District.																										
Holborn ...	55,895	—	15	3	—	1	—	—	7	—	26	6'1	—	1	1	—	2	—	—	—	3	7	1'6	84	19'6	108
Finchbury ...	97,466	—	37	9	—	2	—	—	7	—	65	7'4	—	7	2	2	1	—	—	—	1	13	1'7	166	22'2	102
City of London ...	21,367	—	7	1	—	1	—	—	3	—	12	7'3	—	—	—	1	1	—	—	—	—	2	1'2	30	18'3	121
East District.																										
Shoreditch ...	116,103	—	13	16	—	4	—	—	9	—	41	4'6	—	6	—	2	10	—	—	—	4	22	2'5	190	21'3	113
Bethnal Green ...	130,609	1	27	16	—	3	—	2	11	—	60	6'0	—	1	1	2	10	—	1	—	1	16	1'6	212	21'2	168
Stepney ...	207,176	3	70	36	—	9	—	—	19	—	137	5'8	—	9	2	10	19	—	3	—	4	47	2'0	407	17'3	107
Poplar ...	170,073	—	42	27	—	6	—	1	15	—	91	7'0	—	2	1	2	9	—	2	—	5	21	1'6	235	17'9	100
South District.																										
Southwark ...	259,143	—	73	21	—	4	—	4	22	—	124	7'7	—	15	6	2	2	—	—	—	2	27	1'7	366	19'1	122
Bromley ...	128,639	—	78	20	—	—	—	—	15	—	113	11'5	—	1	2	2	4	—	—	—	4	13	1'3	181	18'3	134
Lambeth ...	315,774	—	114	33	—	5	—	3	19	—	174	7'2	—	18	4	3	10	—	2	—	5	42	1'7	397	16'4	123
Battersea ...	178,622	—	39	16	—	3	—	2	11	—	71	5'2	—	4	—	1	7	—	—	—	6	18	1'3	210	16'2	137
Wandsworth ...	273,381	—	105	52	—	6	—	—	22	—	185	8'8	—	18	1	2	6	—	—	—	4	36	1'7	257	12'3	122
Deptford ...	274,132	—	62	16	—	1	—	1	20	—	100	4'8	—	20	1	1	9	—	2	—	4	35	1'7	323	15'4	132
Greenwich ...	115,495	—	49	13	—	1	—	2	13	—	78	8'8	—	18	1	1	10	—	1	—	2	35	1'4	164	18'5	139
Lewisham ...	105,350	—	41	16	—	2	—	1	8	—	107	13'2	—	4	—	3	2	—	—	—	2	11	1'4	112	13'9	103
Woolwich ...	148,463	—	27	24	—	3	—	1	6	—	61	5'4	—	3	—	4	4	—	—	—	2	13	1'1	174	15'3	128
Port of London ...	127,345	—	45	73	—	2	—	—	12	—	132	13'6	—	—	—	—	3	—	—	—	—	6	0'6	124	12'7	63
* Including membranous croup.																										

* Including membranous group.

diphtheria patients under treatment in the Metropolitan Asylums hospitals, which had been 723, 701, and 867 at the end of the three preceding months, had further risen to 928 at the end of last month; the weekly admissions averaged 116, against 100, 101, and 121 in the three preceding months. The prevalence of enteric fever showed a slight decline from that recorded in January; among the various metropolitan boroughs this disease was proportionally most prevalent in the City of Westminster, St. Pancras, Hackney, Shoreditch, Stepney, and Poplar. There were 79 enteric fever patients under treatment at the end of last month, against 116, 78, and 95 at the end of the three preceding months; the weekly admissions averaged 11, against 17, 13, and 16 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Holborn, the City of London, Southwark, Bermondsey, and Deptford. The 28 cases of puerperal fever notified during the month included four in Islington, four in Southwark, three in the City of Westminster, three in Lambeth, and two each in Hammersmith, Bethnal Green, Battersea, and Deptford.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending March 3rd, 5743 deaths of persons belonging to London were registered, equal to an annual rate of 15.9 per 1000; in the three preceding months the rates had been 17.0, 17.6, and 16.0 per 1000. The death-rates last month ranged from 10.8 in Stoke Newington, 12.1 in Hampstead, 12.3 in Paddington and in Wandsworth, and 12.7 in Woolwich, to 19.1 in Southwark, 19.6 in Holborn, 21.2 in Bethnal Green, 21.3 in Shoreditch, and 22.2 in Finsbury. The 5743 deaths from all causes in London last month included 495 which were referred to the principal infectious diseases; of these, 175 resulted from measles, 36 from scarlet fever, 65 from diphtheria, 142 from whooping-cough, 16 from enteric fever, and 62 from diarrhoea. The lowest death-rates from these diseases were recorded in Paddington, the City of Westminster, Hampstead, Hackney, Wandsworth, and Woolwich; and the highest rates in Hammersmith, Finsbury, Shoreditch, Stepney, Southwark, Lambeth, Camberwell, and Deptford. The 175 deaths from measles were slightly fewer than the corrected average for the corresponding periods of the four preceding years; this disease was proportionally most fatal in Hammersmith, Finsbury, Southwark, Lambeth, Camberwell, and Deptford. The 36 fatal cases of scarlet fever showed a small decline from the corrected average number; among the various metropolitan boroughs this disease showed the greatest proportional mortality in Fulham, Finsbury, Southwark, Bermondsey, and Lambeth. The 65 deaths from diphtheria were 22 below the average number in the corresponding periods of the four preceding years; this disease was proportionally most fatal in Hammersmith, Chelsea, Stepney, Greenwich, Lewisham, and Woolwich. The 142 fatal cases of whooping-cough showed a decline of 38 from the corrected average number; among the various metropolitan boroughs the highest death-rates from this disease were recorded in Stoke Newington, Shoreditch, Bethnal Green, Stepney, and Deptford. The 16 deaths referred to enteric fever were 11 below the corrected average; of these 16 deaths, three belonged to Stepney and two each to Paddington, Poplar, Lambeth, and Camberwell. The 62 fatal cases of diarrhoea just exceeded the average number in the corresponding periods of the four preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Hammersmith, Holborn, Shoreditch, Poplar, Bermondsey, and Battersea. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 22 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 118 per 1000. The lowest rates of infant-mortality were recorded in Paddington, Chelsea, St. Marylebone, Stoke Newington, and Woolwich; and the highest rates in Hammersmith, Fulham, Hampstead, Bethnal Green, Battersea, and Deptford.

LONGEVITY.—Mr. David Williams of Hendrefawr Farm, near Ammanford, South Wales, celebrated the 102nd anniversary of his birth this month. He was born at Llannon, near Llanelly, in March, 1804.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: R. H. J. Browne to the *Albion*, on recommissioning, and E. H. Meaden to the *Illustrious*, on completing. Staff Surgeon: J. A. L. Campbell to the *Repulse*, on recommissioning. Surgeons: S. H. Facey to the *Pembroke*, for disposal; D. H. Vickery to the *Illustrious*, on commissioning; P. W. McVean to the *Tyne*, on recommissioning; A. S. Bradley to the *Crescent*; and H. Cooper to the *Research*, lent, for surveying services.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels (dated Jan. 30th, 1906):—Michael T. Yarr, Charles H. Melville, Bernard L. Mills, Horace Cocks, James B. Wilson, John Kearney, Frederick W. G. Hall, Arthur Kennedy, Henry P. G. Elkington, John B. W. Buchanan, Henry M. Adamson, Tudor G. Lavie, Harry H. Brown, Thomas H. Corkery, and James J. O'Donnell.

Lieutenant-Colonel John Kearney retires on retired pay (dated March 14th, 1906).

Colonel G. D. N. Leake has returned to India from sick leave. Lieutenant-Colonel W. L. Reade is posted to the Secunderabad Division on arrival in India. Captain A. D. Waring is posted to the Belfast District for duty at Belfast.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Gloucestershire: Surgeon-Lieutenant-Colonel J. S. Carleton is granted the honorary rank of Surgeon-Colonel (dated March 14th, 1906). 2nd Middlesex: Surgeon-Major (Honorary Captain in the Army) A. Thorne to be Surgeon-Lieutenant-Colonel (dated Feb. 19th, 1906).

Royal Engineers (Volunteers): 2nd Lancashire (The St. Helens): Surgeon-Captain R. Jackson to be Surgeon-Major (dated March 14th, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Scottish Command: Aberdeen Companies: Peter Howie to be Lieutenant (dated March 14th, 1906). Edinburgh Company: John May Darling to be Lieutenant (dated March 3rd, 1906). Glasgow Companies: Captain (Surgeon-Captain, Army Medical Reserve of Officers) S. M. Sloan resigns his commission (dated March 14th, 1906).

AWARDS FOR GALLANTRY.

The Chapter-General of the Order of the Hospital of St. John of Jerusalem in England has, on the recommendation of the Commander-in-Chief in India, conferred the medal for distinguished acts of gallantry in saving life on land at imminent personal risk on a number of officers and men, in recognition of their gallantry during the earthquake at Dharmasala on April 4th, 1905.

THE TREATMENT OF VENEREAL DISEASE AND SCABIES IN THE ARMY.

We have received an official copy of the final report of the Commission appointed by the Advisory Board of the Army Medical Service, forming the last of the series on the above subject, in which the principal conclusions to be drawn from the collected information are admirably set forth, together with practical recommendations as to treatment. We have been very favourably impressed with the scientific and practical value of the information contained in this final report. The whole inquiry has evidently been conducted in a very careful and exhaustive way and the results, which are for the most part new and not to be found elsewhere, are arranged and stated in this final report with great clearness and precision. We strongly advise the medical officers of our public services and all who are interested in the subject and desirous of keeping themselves abreast with the latest views and researches to read the report for themselves, for they will find a great deal of valuable and practical information not, as we have said, procurable elsewhere.

ARMY POLICY.

Mr. Haldane's recent speech explanatory of the Army Estimates has the great merit of having lifted the subject of army organisation up to a higher plane than that which it has hitherto occupied. The speech was an eminently fair, plain, and statesmanlike as well as prudent exposition of the new War Secretary's views. The subject is confessedly one of the greatest importance and of unusual difficulty and complexity and Mr. Haldane showed both his

courage and business aptitude by his method of dealing with it. There was nothing, however, in his long speech to bring it directly within the purview of the medical journalist, although, when more closely looked at, it will be found to be connected intimately with the question of the improvement of public health of the civil population in times of peace and with that of an adequate medical and sanitary provision for our armies in time of war. Mr. Haldane's speech dealt mainly with broad, common-sense principles; it only pretended to set forth views of a more or less tentative and provisional kind in regard to what should be our future army policy and to indicate the line of reasoning that had commended itself to his mind as the best and most suitable to our insular conditions and national institutions, habits, and customs. There is much in what Mr. Haldane has said which naturally invites inquiry and calls for comment but his speech does not lend itself to any brief notice.

Correspondence.

"Audi alteram partem."

THE INSTITUTE OF MEDICAL SCIENCES AND THE MEDICAL CURRICULUM.

To the Editors of THE LANCET.

SIRS,—A great many of your subscribers must have felt considerable surprise on reading in THE LANCET of March 10th, p. 692, that "the idea of conducting the teaching of anatomy and physiology in institutions apart from hospitals, eminently desirable as it is from the point of view of hygiene, was a novel one to the majority of medical teachers in London." If this be so "the great majority of medical teachers in London" must be indeed youthful. Surely, many remember the idea being discussed in the "eighties"; also that some years ago (owing to the action of the Statutory Commissioners, 1898) the mist of uncertainty as to what would be the outcome of the idea was cast over the medical schools in London; and that in 1901 two-thirds of the London Medical Schools, when canvassed by the Medical Faculty of the University, were found to be unfavourable to the idea. It is to be regretted that the support of THE LANCET is given to a scheme which, if it ever becomes effective, must result in separating the teaching and study of anatomy and physiology from direct association with the teaching of the clinical and operative practice of medicine and surgery, of which these sciences are the foundation and backbone. The present time is pregnant with warnings as to the disadvantages and dangers of separating, in other practical branches of knowledge, the study of technology from the study of the sciences upon which they are based.

In reference to the proposed Imperial Institute of Technology and the New Royal College of Science, as also in reference to the coal tar colour industry, the persons best able to judge have been laying stress in the public press upon the importance of the close association between the teaching of pure and applied science and of taking the teaching of science out of purely academic hands. The scientifically trained young men from the universities, crammed with formulas and text-book knowledge, are found, we are told, by the manufacturers, to be of no use to them; and it is hoped that the New Royal College of Science will remove the limitations of scientific knowledge as taught in the schools and universities. It is felt that "the pure scientist must be kept in touch with the technologist," that technology should not grow up apart from academical science; and the committee on the proposed Technological Institute at South Kensington says "it is of the first importance that there should be no divorce between teaching and research in technology on the one hand, and in pure science on the other."

These same views are equally applicable to the study of anatomy and physiology in their relation to medicine and surgery. The medical student has to study anatomy and physiology not merely to become imbued with the scientific spirit, but to acquire definite scientific knowledge towards a working, practical end. However desirable it may be (and no one will grant that it is so more readily than I) that every student of medicine should receive a university training—and

that, too, in literature as well as in science—yet we know that this is far from being possible for all; and it ought to be borne always in mind that the business of the medical schools is to turn out medical practitioners. This being the object in view it is in the highest degree ill-judged to attempt to compel students to devote three years out of a five years' medical curriculum to university training and academical methods. It is well that anatomy should be integrated with physiology, that structure and function should be studied in association with one another, that development and variations in form should be illuminated by embryology and biology, and organisation shown to be adjusted to conditions and requirements. But by what right has this method of teaching come to be considered special to "university teaching"? This same method has nowhere been better employed than in some of the smaller medical schools in London.

It ought, however, to be unnecessary to have to assert that one of the chief uses of anatomical study is the training and discipline it affords for the eye and the hand, and that in this respect the assistance which a student gets from a good demonstrator in the dissecting-room of a small school is worth many times more to him in preparing himself for the practice of his profession than the most learned lectures by the most profound professor in a university. If "concentration" of teaching in a university has all the advantages claimed for it by its advocates, how comes it to pass that extra-mural schools and classes exist in those centres where university teaching is concentrated?

Are we to admit as an advantage to mathematical study "the elements of physics which the student should bring with him from school, where mechanics should form a quickening part of his mathematics," and to deny that the near presence of actual disease in, of injuries to, and operations on, the living human body—of which the student hears from others in a medical school, without his own science studies being either interfered with or interrupted—has any quickening effect upon his study of anatomy?

As to the "economy" of concentration, the mere repetition of the statement will not make it true. I have shown elsewhere, from the figures put forward by the University of London and its medical faculty, that whilst the proportionate number of teachers at the proposed institute will be the same as at the existing medical schools of London, the salaries proposed to be paid to them are at the rate of £16,250 a year more.

The idea that the anatomical department of a medical school impairs the hygiene of the hospital is—when we consider the modern methods of preserving the subjects, the construction of the store rooms, and the distance in most instances of the anatomical department from the hospital buildings—as fallacious as the argument that the abandonment of the dissecting rooms and physiological laboratories would be welcomed by the governors of the hospitals. I know that as regards the Middlesex Hospital the very reverse is the case and that their abandonment would entail a very heavy loss.

Instead of squandering tens of thousands of pounds on a site and buildings for the purpose of concentrating the teaching of anatomy and physiology at South Kensington, it would be far more to the point if the University could contribute to the upkeep of the existing medical schools as affiliated colleges of the University.

The objections to an Institute of Medical Sciences in London for the teaching of the preliminary science subjects of the medical curriculum, though of a different character, are no less strong than those against the teaching of anatomy and physiology at such an institute. And is it worthy of the London University, impecunious as it is and largely dependent upon a Government subsidy, to be begging money to erect costly buildings for the teaching of the elements of these preliminary sciences? This teaching is already amply provided for in and about London and therefore the University would be entering into competition with numerous schools and colleges which are now doing the same work quite satisfactorily. There are at the present time no less than 95 institutions other than medical schools and universities recognised by the two Royal Colleges as places of study in science, 35 of which have been recognised for biology, chemistry, and physics, and 60 for chemistry and physics. Large sums have been spent at many of these places to equip laboratories and remunerate the staffs of teachers. At Dalwich £18,000 are now being expended in providing science laboratories and a museum,

which are to be opened within 12 months. Moreover, sooner or later these preliminary sciences will no doubt be struck out of the medical curriculum. The curriculum must be lightened and that before very long. Is it not cruelly unfair to the students and their parents, and is it creditable to the authorities, that a curriculum of any given number of years' duration should be so overburdened with subjects of study that it is impossible for the average student to complete successfully the course in less than half again as many years as the nominal length of the curriculum? Is it honest to set before parents a curriculum arranged for five years, knowing all the while that the sons of those parents will almost surely require seven or seven and a half years before they become qualified? The length of the curriculum ought to be, and could be, made proportionate to the extent and number of the subjects to be studied.

The very statistics and arguments which are used against eliminating the preliminary sciences from the curriculum, and against extending the period of study even though these sciences are retained in the curriculum, are very strongly in favour of such elimination. And if eliminated, one of the vaunted needs of an Institute of Medical Sciences in connexion with the University of London disappears. I would gladly see, and would do what lay in my power to assist, the establishment of an Institute of Medical Sciences other than for schoolboys and first and second years' students of anatomy and physiology. There are many purposes for which such an institute is badly needed, e.g., to assist biological, physiological, and pathological investigations and research, for the good of agriculture, animals, and man; and upon which the money it is proposed to waste on this needless school of elementary science and on superfluous dissecting rooms might with unmixed advantage be spent. It is said that when Albert de Broglie was elected to the French Academy M. Villemain remarked: "Eh! bien, pourquoi pas? Il n'y a rien contre lui, excepte ses écrits, et c'est si peu de chose." Similarly, it may be said that there is nothing against the proposed Institute of Medical Sciences except the objects for which it is proposed, and nothing much against the statistics and statements respecting the preliminary sciences and the medical curriculum except the conclusions which have been officially drawn from them.

I am, Sirs, yours faithfully,

Cavendish-square, W., March 12th, 1906. HENRY MORRIS.

PROPOSED UNION OF MEDICAL SOCIETIES: A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—I trust that you will have the goodness to allow me the courtesy of your columns to make a personal explanation. At the recent annual meeting of the Royal Medical and Chirurgical Society, *apropos* of the question whether the premises at 20, Hanover-square, would be suitable for the proposed amalgamated society, I understand that one of the Fellows present stated that I had been consulted as to the condition of the premises and that I had reported "that the building would require pulling down and rebuilding in about 50 years." I desire to say that there is not the slightest foundation or justification for such a statement. I have not discussed the matter with any but the officers of the society and had I been asked for my opinion as to the probable duration of the present building I should have stated emphatically that it was, in my opinion, as likely to stand for another 100 years as any building of its age in London, and I have not the slightest doubt that it will remain a good and useful building for even a longer period if kept in proper repair.—I am, Sirs, yours faithfully,

JOHN BELCHER, A.R.A., President R.I.B.A.

Hanover square, London, W., March 8th, 1906.

THE ETHICS OF THE MEDICAL PROFESSION IN RELATION TO SYPHILIS AND GONORRHOEA.

To the Editors of THE LANCET.

SIRS,—The real gravity of the issues at stake must be my excuse for asking space for a rejoinder to Mr. Campbell Williams's courteous reply to my criticisms. What, now, were the main points of my arguments? They were: (1) that the danger to the health of the community by the spread of venereal disease was grossly exaggerated; (2) that the

suggested remedy having signally failed in those very countries where it had been most rigorously enforced was thus of proved inefficiency; and (3) that not only was it futile but in addition was positively mischievous in that it brought into existence manifold evils far more baneful in effect than the evil it was destined to prevent.

In his reply Mr. Williams evades the gravamen of my attack and contents himself with the reiteration of *ex cathedra* utterances. To take his replies to my three propositions seriatim, Mr. Williams, as an answer to the first, favours me quite unnecessarily with a lengthy list of the pathological phenomena and sequelæ of venereal disease with which I was already familiar and which, with him, I equally deplore. But what possible relevance has this to the immediate question at issue between us? We are not discussing the sequelæ of venereal disease but the relative amount of its incidence on the population at large. I contend that venereal disease at the present day is less in quantity and severity than 100, or even 50, years ago, while at the same time treatment has increased in efficiency out of all recognition. When Mr. Williams can prove the contrary, and also give reliable statistics showing that the percentage incidence of venereal disease is really alarming in relation to the community as a whole, then, and then only, will he disprove my assertion that the danger of venereal disease to the community has been vastly exaggerated.

To my contention that his proposed remedy is a proved failure Mr. Williams's reply is really astonishing. He brushes aside as relatively worthless (referring to it merely as a "disparaging comparison") the admitted failure of State regulation in those countries where *par excellence* it has been universally and rigorously enforced (a surgical friend aptly reminds me that Brussels, the best regulated city in Europe, was the first to call attention to this failure at the last International Congress), yet, on the other hand, he quotes approvingly the authority of Hill and Cooper as evidence of the "sanitary benefits which the enforcement of the Acts conferred upon those districts in which they were operative" (i.e., in this country where the Acts were only partially enforced), while to crown this logical *tour de force* he himself naively remarks that "it is requisite for it [the Contagious Diseases Act] to be general throughout the country and not to restrict its operation to a few chosen localities; for therein lies the certainty of failure." Comment is needless. Take the army returns for the protected districts in the United Kingdom before, during, and after the period of protection. In 1864, just before the first Contagious Diseases Act came into operation—the proportional figures per 1000 of soldiers admitted to hospital suffering from venereal diseases was 260. Ten years later when the Act was increased in scope it was 126 but in 1883 it had risen again to 234 in spite of protection. The protection being removed in that year it rose to 276 but afterwards fell again progressively to 191 in 1895 without any protection. So much for mere statistics. If the fall in 1874 was due to protection was the rise in 1883 also due to protection, and what was the fall in 1895 with no protection due to? Statistics are like algebraical formulae, useful in mathematical calculations but as data from which to draw far-reaching inferences are often mischievously misleading since, like algebraical symbols which take no account of whether forces, values, or quantities are to be expressed, statistics do not express those manifold varying conditions which must be taken into account before right conclusions can be drawn.

In answer to my third contention, Mr. Williams admits that serious evils have beforetime been brought into existence by meddling legislative interference, but remarks "that one could imagine that it is possible to devise some plan of official supervision of subordinates which would curb individual denouncing power."

Mr. Williams is of a more optimistic turn of mind than many people where officialdom is concerned. It is an *a priori* inference from human nature that irresponsible power is sure on the average of cases to be grossly abused. Some years ago at a trial in France the fact was brought out that the people of Lille had been subjected to an organised terrorism which had grown out of the system of prostitute inspection. Though 500 women were said by one of the criminals to have fallen into their hands, though they had been blackmailed and outraged to this extent, yet the practice went on for the reason, obvious enough, that those aggrieved preferred to submit rather than endanger their

character by complaining. "Plans" for the avoidance of evils anything approaching this should surely not be left to the "imagination." Mr. Williams can see no difference between consigning a small-pox patient to a hospital and immunising a prostitute. I may be excused if I fail to see the parity. A small-pox patient when cured is not forcibly put in a degraded class and subjected to police domiciliary visits, has no social stigma, and is not treated as a semi-criminal. Is a woman, because a prostitute, to have no legal right, no personal liberty? In other words, a system of white slavery is to be maintained for the safe exercise of the male sexual instinct. See now the paradox—to develop a muscle exercise it, to develop an intellectual faculty exercise it, but to develop a moral faculty our social reformers never seem to dream that it also must be exercised. On the contrary, in effect, they imply that if a man be lazy feed him at the expense of others. If a drunkard remove the source of temptation. If sexually dissolute make dissipation easy. But do not ask him to exercise his faculty of self-restraint. As Spencer well says: "With the blindness born of ignorance men strive to fly in the face of the natural law that each individual shall suffer the good or evil effects of his own actions and in so doing unlock the most portentous possibilities of crime and injustice."

I am, Sirs, yours faithfully,
DUDLEY BURNEX.

March 12th, 1906.

THE DANGERS OF THE FLUTE-KEY FLASK FOR ADMINISTRATION OF ETHYL CHLORIDE.

To the Editors of THE LANCET.

SIRS,—I venture to call attention to the methods at present in vogue for administering ethyl chloride. The three principal methods with which I am acquainted are: (1) the flute-key flask; (2) Messrs. Duncan Flockhart's flask; and (3) Messrs. Sumner's measure. The first I consider a dangerous method and should be glad to have the opinion of others on this important matter. Personally, I have always been able to manage to spray out the required quantity into the inhaler but with difficulty. I have, however, met a number of medical men who have been quite unable to do this, often putting in too much or too little, owing to the difficulty of manipulating the flute key. I have on several occasions known the whole of the top of the flute-key flask to come off, leaving the anaesthetist in a fix, besides wasting the drug. I, however, cannot speak too highly of the simplicity of the second and third methods mentioned. To those who care to use the flute-key flask this may still be done safely by measuring 85 minims of ethyl chloride in a minim measure and then putting this quickly into the inhaler.

I am, Sirs, yours faithfully,
THOMAS YOUNG SIMPSON.

Royal Albert Hospital, Devonport, March 10th, 1906.

THE ADMINISTRATION OF ADRENALIN IN CASES OF FAILURE OF THE CIRCULATION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 3rd, p. 595, Dr. H. O. Butler describes an interesting case of a child apparently suffering from severe vaso-motor exhaustion following the crisis of pneumonia. I have for some time been carrying out an exhaustive investigation into the action of this and similar drugs which act upon the blood pressure and some of the results have already been published in my Hunterian Lectures on Shock in 1905.¹ Adrenalin is a tremendously powerful drug and of immense value if properly used, but there are some facts relating to its action and method of administration which are, I venture to think, but imperfectly understood, and if you will permit me I should like to point these out. In the first place, Dr. Butler in his account of the case speaks of adrenalin as a vaso-motor stimulant. This is a mistake, as in no sense can adrenalin be called a vaso-motor stimulant. Adrenalin acts directly upon the vessel walls and not through the nerve centres at all, and it is upon this very fact that its great value in cases of vaso-motor exhaustion depends. It acts by causing

constriction of all the peripheral vessels and so raising the blood pressure. This action has nothing to do with the nervous system and in an animal the whole of whose central nervous system has been destroyed the drug acts in the same way and to the same extent as in a normal animal. Dr. Butler undoubtedly saved the child's life by his timely use of adrenalin, but I think that he would have obtained even better results had he used a smaller dose of the drug. The apparent death of the child after the injection of 15 minims of adrenalin was probably due to an excessively high blood pressure, with which the heart in its already weakened condition was temporarily unable to cope. An injection of one or two minims or even less would have been enough to raise the blood pressure to the necessary height. Adrenalin is a very powerful drug and minute doses, provided they get into the peripheral circulation, will raise the blood pressure far above the normal level. In cases of failing circulation with a very low blood pressure adrenalin if injected under the skin will have a very poor chance of reaching the peripheral blood-vessels, as there is not sufficient circulation, and in such cases it must be administered by intravenous infusion so as to drive it into the circulation. When adrenalin is used for intravenous infusion it should never be used in a stronger solution than 1 in 20,000. The drug, besides acting on the peripheral blood-vessels, acts also upon the cardiac muscle, causing contraction, and if an excessive dose be given the heart muscle passes into a condition of rigor. Also, the very high blood pressure which immediately follows a big dose may result in fatal dilatation of the heart. Adrenalin should only be given in very small doses and should be repeated frequently, as the action of the drug is very transitory, its full effect only lasting about two minutes. Lastly, I should like to point out that adrenalin administered by the mouth or rectum has absolutely no effect whatever upon the circulation. I believe few of us realise what an enormously powerful drug adrenalin is and of what value in saving life it may be. I hope with Dr. Butler that his case may be the means of drawing attention to its usefulness in similar instances.

I am, Sirs, yours faithfully,
P. LOCKHART MUMFERT.

Cavendish-place, W., March 12th, 1906.

AN OFFICIAL STANDARD OF PURITY FOR JAM.

To the Editors of THE LANCET.

SIRS,—I regret that in THE LANCET of March 10th my regard for concision should have exposed me to a misunderstanding. When I stated that glucose was used by confectioners to prevent crystallisation I should also have said that this was one of the reasons for employing a certain percentage of that article, and this you do not deny is a preferable method to using cream of tartar. The other reason is not, I must insist, its cheapness but that it makes a more palatable sweetmeat. But neither in the making of jams nor sweets does the proportion of glucose to sugar ever exceed 25 per cent. To use more is practically impossible. On the question of cost you will permit me to say this: the price of glucose is at present 11s. 6d. per hundredweight and cane sugar can be bought as low as 11s. per hundredweight. But as glucose contains about 25 per cent. of moisture which must be dissipated its cost is still further raised, making it some 3s. 3d. per hundredweight dearer than sugar. To use the extra-refined cane sugar such as you refer to is quite out of the question. It never has been, is not, and could not be used by confectioners save on the condition of making jam and sweets an almost unapproachable luxury. Even to use exclusively the cheaper cane sugar would be quite impossible, for the simple fact that there is not enough to supply a mere fraction of the demand even if it were only used generally for household purposes. For the rest, if I am mistaken in thinking that your note identified adulteration with unwholesomeness and contained the implication that cheap jams were less wholesome than dear jams, I must express my regret; but then I am at a loss to see what was the point of your note. Nor can I see any reason for insisting upon the use of cane sugar save on the assumption that beet is less wholesome. I had certainly never expected that THE LANCET would worry itself about a mere question of marks for merchandise unless it involved some consideration affecting the health of the community. If the percentage of glucose used in jams or the ingredients of

¹ THE LANCET, March 18th and April 1st, 1905.

the cheap jams make them less wholesome than THE LANCET would be quite justified in insisting that the labels should inform the purchaser what he is buying. But as you do not deny, and therefore I must assume admit, that beet sugar is as pure and wholesome as cane sugar and that the glucose used by confectioners is as wholesome as either, the medical reason for any agitation on the subject seems to be nonexistent.

Should you, Sirs, be inclined to send to me a representative for the purpose of testing the accuracy of the statements I have made I shall be pleased to supply him with the necessary proofs.

I am, Sirs, yours faithfully,

MORRIS STREIMER.

March 12th, 1905.

INCIDENTAL INSOMNIA.

To the Editors of THE LANCET.

SIRS,—It commonly happens that persons otherwise apparently in good health find a difficulty in sleeping without a break, their night's rest being interrupted by fits of wakefulness; after falling asleep for an hour or two they awaken—a modified or incidental insomnia takes the place of normal repose. I believe, and I suggest, that this may be due to a disturbance of the equilibrium of the cerebral circulation. The cause of the disturbance may be very various. I do not propose to enter into the question of cause but I have in many instances successfully counteracted the result by forced *inspiratory* movements, by assisting and encouraging the return flow of blood to the heart: by a rapid and thorough expansion of the chest cavity, by the vacuity produced, the blood in the great veins of the neck and upper thorax is sucked in and hastened on to its ultimate destination.

The large serrati muscles (costo-scapulares) are more especially called on for this duty. The serratus, by its hindmost attachment to the posterior border of the scapula, as a muscle of "extraordinary" inspiration, requires for its action in this capacity that the scapula should be steadily and firmly held to the spine by the muscles allocated to this end—in other words, by the shoulders being vigorously held backwards. The deep breathing thus carried out for 8, 12, or 15 inspirations usually suffices to induce the wished-for somnolence. Anyway it is an experiment easily tried and without risk.

The influence of respiratory movements is demonstrated by the effect of a prolonged and forced *expiratory* action. The impediment to the return flow of blood is easily to be observed when a vocalist with an uncovered neck is singing a long-sustained high note; the external jugular veins will be seen in their course across the sterno-mastoid muscle in a state of extreme distension, accompanied by congestion of the veins of the head and face, indicating hindrance to the blood current towards the heart.

I am, Sirs, yours faithfully,

T. W. NUNN.

York terrace, N.W., March 13th, 1905.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, LONDON.—A reproduction of the Nice Carnival will be held at the Crystal Palace on Friday and Saturday, June 1st and 2nd, in aid of this hospital. The fêtes will commence each day in the afternoon, when there will be a procession of decorated cars, divided into three classes—viz., a heavy, a light, and a children's class. In connexion with the processions there will be a battle of flowers. The entry fees will all be distributed as prizes and for the three classes will be respectively two guineas, one guinea, and half a guinea. On both evenings a costume ball will be held on a floor to be specially laid in front of the Handel Orchestra, the price of tickets for which will be half a guinea and will include light refreshments. It is hoped that fancy dress will be generally worn but no masks will be allowed. The other attractions will be a theatrical play, a *café chantant*, and a drawing for 25 coupons presented by certain firms entitling the winners to select goods without any payment from the firm whose coupon has been won. The charges for admission will be, on the first day of the carnival, 2s. 6d., and on the second day 1s., of which the directors have generously promised to give a considerable proportion to the hospital. The carnival is being organised by an organising expert, Mr. E. Douglas White, 19, South Molton-street, Bond-street, W., who is asking that any lady or gentleman willing to assist in the work by acting as an accredited agent or joining any of the 50 district committees should communicate with him.

THE FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

EXCURSIONS IN PORTUGAL.

(FROM OUR SPECIAL COMMISSIONER.)

It is time that preparations should be taken in hand and plans thought out so that those who will attend the Fifteenth International Congress of Medicine may make the best use of their opportunities. Obviously all who can afford the time and extra outlay will endeavour to see something of the beautiful and interesting country within easy reach of Lisbon. So far as Portugal itself is concerned this can be done with ease and the expenditure of comparatively little time or money. As it is the Portuguese people who are endeavouring to give the medical profession a hearty reception the visitors will naturally be expected to manifest a grateful interest in the country. Nor will such sympathy be without its reward. The only wonder is that a greater number of tourists and sightseers do not visit this part of Europe. There is a wonderful variety of scenery in Portugal. The romantic rocks, cliffs, and rugged islands on the coasts afford a complete contrast to the lagoons of Aveiro or the vine-clad hills that flank the Douro and the vast ranges of mountains that become more and more Alpine in appearance as they approach the north of the kingdom. The vegetation, especially the semi-tropical vegetation, is said to be the richest in Europe; it is certainly the most ancient so far as exotic plants are concerned. These were brought over from Brazil and the South Seas, from Africa, India, and Cathay by the early Portuguese navigators who were the first European pioneers. Many plants collected by these hardy mariners were sent by King Emmanuel the Fortunate, who reigned over Portugal from 1496 to 1521, to the Carmelite monastery of Bussaco. The monks took the greatest care of such gifts and soon a forest of exotic shrubs and trees grew up. Indeed, so sacred was this trust considered that the Pope Urban VIII. issued a special Bull in 1643 threatening with excommunication anyone who injured these plants.

To-day at Bussaco the palace originally designed as a marriage offering to the present King, H.M. Carlos I., has been converted into one of the best and certainly most beautifully situated hotels in Portugal. Its balconies, its tower 140 feet high, overlook these marvellous plantations. Close at hand is the battlefield where Wellington defeated Massena in 1810 and there are here innumerable walks over slopes and gullies amid fern, aloes, palms, acacias, and cork trees. Flowers and fruit abound on all sides. Camellias grow wild and cover the bushes with pure white, crimson, or pink flowers. The almond, fig, orange, lemon, and olive trees supply useful fruit as well as scent and shade. The records of the Agricultural Department at Lisbon show that no less than 4000 varieties of vegetation are grown in the old monastery grounds which have now become the gardens of the Bussaco Grand Hotel.

Other visitors, however, may be more interested in such sights as the picturesque Castle of Pena at Cintra; that also dates from the time of Emmanuel the Fortunate. It was built where a Moorish fortress stood and is a mixture of Moorish and Gothic architecture. Indeed, throughout Portugal there is much to attract the lover of ancient architecture and the archaeologist. What, for instance, can be more quaint than the old university town of Coimbra, founded in the fourth century, devastated by the Moors in the ninth century, and which became for a while the capital of Portugal in the twelfth century? To-day it is the only university town in the kingdom and here the degrees are still conferred in the ancient manner just as ordered in 1431 by King John I. The students also keep up the old dress and customs and may be seen, guitar in hand, finding in music relief from study. At Oporto, at Lisbon, and many other places old Roman and Moorish remains are to be found amid splendid structures that date from the Middle Ages, and thus Art and Nature have combined to render the country interesting and beautiful. It is obvious, therefore, that the first thought of those who have either finished or not commenced their Congress work will be how to see something of Portugal.

The first question will be whether such an excursion had better be attempted before or after the Congress. The

weather is more likely to be fine, though perhaps a little hot after. Any delay or hitch in organisation will probably have been rectified by that time—for instance, the railway servants will be better acquainted with the nature of the facilities to be accorded to members of the Congress. On the other hand, past experience of many congresses leads me to suggest that it would not be safe to place too much reliance on the promised reduction of 50 per cent. on railway fares. This concession is generally hedged in with a good deal of red-tapeism, and, in any case, the easier it works the greater the number of excursionists, the greater the crowding in the hotels, and the higher the prices charged. Thus what is saved in railway fares is sometimes insufficient to cover the increased cost of living at the hotels. It certainly is more comfortable to make excursions either before the Congress or some little time—a week or so—after it. As, however, on this occasion Easter just precedes the Congress it would be imprudent to attempt an excursion to Seville and the south of Spain. No tariff, coupon, or contract ever holds good during Holy Week. There is no reason, however, why excursions should not be made in Portugal during that time.

To see the open country the best method is to form parties of four and to share the expense of a carriage. Thus from Lisbon or Ointra the train can be taken to Caldas da Rainha, where there are celebrated sulphur baths which were opened by Queen Leonora in 1485, and since then a hospital has been available for sufferers, so there must be some ancient medical records. Here a carriage could be obtained to drive to Alcobaça where 999 monks are supposed to see that the celebration of mass never ceases day or night in the Cistercian Abbey which was founded in 1148. After visiting the ancient buildings the drive would be continued to Batalha where, in 1388, the Dominicans began to build after English models and the name is supposed to be derived from William the Conqueror's Battle Abbey. The masons were brought over from England by Philippa of Lancaster, daughter of John of Gaunt, who married John I. of Portugal in 1416. Here are Royal tombs and much to interest historian, artist, and architect. The drive might now be continued through venerable pine forest and then over cornfields and vineyards to Leiria, once an important Roman town. The train could be taken again near Thomar for the university town Coimbra. Here another carriage could be procured to drive to Bussaco, which would be the culminating point of the excursion. From this last place the excursionist could either return to Lisbon or go on to Oporto. The Booth line claim that they have made the most systematic attempt to organise trips for their passengers to visit Portugal and the South of Spain. Their Lisbon agents, Messrs. Garland, Laidley, and Co., of 28, Travessa da Ribeira Nova, will keep their offices open for all members of the Congress and they have guides and interpreters ready to assist in any way. The excursion described above, including carriages, lunch baskets, railway fares, and hotels, could be managed by them for about £10 and would last some ten days. They state that it is not their business or interest to make money out of such excursions, but they want medical men especially to see for themselves what advantages Portugal possesses as a health and holiday resort, so that the passenger traffic between England and Portugal may increase. There are plenty of passengers to and from South America but they for the most part embark and disembark at Lisbon, so that during the first and last part of the journey from the Mersey to the Amazon river there is generally ample room on board these ships. For those who wish to make an excursion before the Congress the *Jerome* will leave Liverpool on March 28th and Havre on April 1st, reaching Lisbon, after a stay at Oporto, on April 7th. The *Ambrose* will reach Lisbon on April 17th, that is, just in time for the Congress, and there are returning boats from Lisbon for Liverpool on April 29th, May 9th, 18th, and 28th. For their passengers during the Congress week the Booth Line has retained 70 rooms in the first-class and new Hôtel d'Inglaterra at £1 a day all included. This hotel is close to the Congress hall and on the celebrated Avenida.

Other lines are also offering advantages to the members of the Congress. The Royal Mail Steam Packet Company, the Pacific Steam Navigation Company, and the Compagnie des Messageries Maritimes give 15 per cent. reduction on first-class return tickets, which are available on the ships of all three companies. The excursion organised by the Orient Pacific Line, which places the magnificent steamer *Ophir*

entirely at the disposal of the members of the Congress to serve both for travelling and as a hotel when at Lisbon, has already been described. The Hamburg-America line is doing the same with its ship *Oceana*, while from New York the Norddeutscher Lloyd runs its steamer *König Albert* to Lisbon where it will likewise serve as a hotel for the members of the Congress who are passengers on board. Thus it will be seen that there is a variety in the choice of the ways and means to attend the Congress.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Sewerage Scheme.

MANCHESTER for ever strives to escape the stern rebukes or the touching appeals of the Mersey and Irwell joint committee, but never succeeds for long together in doing so. Complaints as to the effluents were made by the committee six months ago and the corporation had a time extension of six months granted so that a second series of contact beds might be made. One bed of half an acre has been working now for six months with extraordinary satisfaction, but slow progress is said to have been made with the rest of the beds required to deal with the whole of the sewage. The samples from "the effluents treated by second contact beds showed that only 0.41 of oxygen was absorbed in a four-hours' test." On the same day samples taken from the tanks and storm filters showed 2.75 and 2.82, the first being excellent and the last two distinctly bad. There was some discussion in the committee as to whether the corporation, urged to economise by the ratepayers, was giving sufficient money for carrying out the sewage work. It was pleaded by one of the Manchester representatives that their scientific advisers had led them to believe that 46 acres of first contact beds and 30 acres for storm overflow would purify the sewage but it had not done so. They had also told them that the standard of the committee was an impossible one. The chairman said that the figures recorded by the officials of the joint committee showed that the standard was not impossible and that when the matter was put before the corporation "they would see where their duty lay." So the corporation escape this time with a "wiggling," for a letter is to be written "and the matter adjourned pending a reply."

"Betting in Human Lives."

In your issue of March 3rd mention is made of seven certificates of death in respect of insurances taken out in the case of a pauper who died in the Prestwich Asylum. Since then it has been discovered that instead of seven the number of insurances on the man's life was 12. This kind of gambling is said to be very prevalent and is illustrated by a case at Bolton where a bankrupt applied at the county court on March 7th for his discharge. He had insured the life of his mother-in-law in three policies and that of his father in two. In this case the speculation failed, for having paid over £873 he was obliged to sell the policies for £160. Judge Bradbury spoke of this betting on the lives of relatives as horrible and disgusting. In this instance there was no suspicion of foul play but in many cases the date of insurance has been a date of ill-omen for the insured, and in the case of infants the fact that pecuniary benefit would follow their death has not tended, among the poor and hard-pressed, to prolong their lives.

An Unsuitable Punishment.

It seems desirable that Mr. Birrell should provide against a danger to health and life from the ignorance of some elementary schoolmasters as to the properties of tobacco. At a West Cumberland elementary school three boys were found chewing tobacco, so the sapient master took it from them, divided it into three parts, and ordered them to chew and swallow it. Two of the boys became violently sick and so far collapsed that they had to be put before the school fire for some time before they were sufficiently recovered to walk home. Though there is a talk about abolishing tests, it might be well to have one to show the candidate's views as to the suitability of tobacco as an article of diet.

The Mossley Water-supply.

It has been matter of common knowledge for some time that lead-poisoning has been very prevalent at Mossley,

caused, it is alleged, by lead in the water supplied by the Ashton and district joint waterworks committee. Fresh cases are continually occurring and the Mossley town council has at length decided that an inquiry by the Local Government Board must be asked for. It is curiously illustrative of a certain class of mind, not infrequently to be found in our municipal councils, whether large or small, that a moderate loss of life and a considerable amount of avoidable disabling illness ought to be put up with rather than that expense should be incurred in taking steps to remove the source of trouble. One member of the town council objected to an inquiry on the ground that it would "lead the town into a lot of needless expenditure." He said that samples of the water showed in two cases infinitesimal quantities of lead and others were declared to be "excellent domestic water," whatever that may mean. Probably it had never occurred to this gentleman to ascertain the cost to the town of the sickness and death caused by a poisoned water-supply or to compare it with that of an inquiry which may lead to the removal of the danger that now constantly threatens. Happily the majority felt that "the health of the people should have the first consideration" and so it was decided to ask for an inquiry.

Fees under the Midwives Act.

A conference of medical men connected with the various medical associations, hospitals, and Poor-law authorities of the city was recently held in Manchester, and it was resolved that a speedy amendment of the Midwives Act, 1902, is called for with a view to settle the question of payment of fees to medical men under the rules of the Central Midwives Board when called in on the advice of midwives. It was also resolved that the Parliamentary subcommittee of the city council should be requested to arrange for the subject to be brought before the Municipal Corporations Association with a view to speedy legislation. It was further resolved:—

That for the present medical practitioners in default of payment by the patient should apply to the corporation under the Public Health Act, 1875, and any other powers the corporation may possess.

At a meeting of the corporation midwives supervising committee on March 2nd, Mr. W. F. Dearden presiding, these resolutions were approved.

A Rochdale Pauper Set on Fire.

An inquest was held on March 12th at Dearnley workhouse, Rochdale, in a case which, on the evidence given, suggests that more care might sometimes prevent tragedies. A man, aged 73 years, who had been an inmate for some time, was being rubbed with methylated spirit by a probationer nurse. Another inmate was assisting her who "did not know the spirit was inflammable." "Owing to the stench" (this inmate must be very sensitive to bad odours) he got leave to smoke to counteract it, "but as he was lighting his pipe the phosphorus fell on Kenny, set fire to the spirit, and the man was seriously burned." The medical officer said that the deceased had been suffering from heart disease, which was the primary cause of death, accelerated, however, by shock. He said also that the nurse's assistant had been helping at such work for two years and if inmates were debarred from it the nursing staff would have to be doubled. It may, it is to be hoped, be presumed that the probationer knew that methylated spirit was inflammable but neither she nor the medical officer appears to have warned the pauper who was helping of the danger and the knowledge was not acquired by this poor fellow, who is really to be pitied, during the two years that he had been "helping at such work." It is surely not too much to expect that ignorant helpers should be warned against special dangers.

The East Cheshire Coronership.

Owing to the death of Mr. Francis Newton an election recently took place of a successor to the office of coroner for East Cheshire. There were 11 candidates, solicitors or barristers, and not one medical man. The gentleman elected, Mr. Ferns, is a Stockport solicitor and an alderman and magistrate for the borough of Stockport. Believing, as most of us do, without any disparagement of Mr. Ferns, that the office of coroner is likely to be better served by a medical man than by a lawyer, it seems unfortunate that there was no medical candidate.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Poisonous Gases in the Forecasts of Ships.

THIS subject has been brought into prominence by the death of a strong, healthy seaman while on a short voyage. The victim slept alone in the fore-castle of the vessel, this apartment being heated by a small cooking stove, but the only outlet for the vitiated atmosphere was closed on account of bad weather. The man was known to be perfectly well at 4 A.M. but a few hours later he was found lying dead in his bunk. Dr. W. E. Harker, medical officer to the Tyne port sanitary authority, examined the body and found that death was due to carbon-monoxide poisoning. With the ventilator blocked the fore-castle was a veritable "death trap." With sailors it is a common practice in bad weather to close up all the air inlets and outlets of their already too small sleeping apartments, while at the same time a small stove is allowed to burn. If the case serves to draw attention to this danger a very useful lesson will be conveyed to a naturally thoughtless class of men.

Model Nursing Scheme for Tyneside.

Under the title of the "Benefit Nursing Association" a system of home nursing has been in successful operation in some of the fishing villages of North Northumberland, and it is proposed to put it on trial on Tyneside. The association is unsectarian, and it provides cottage nurses who have undergone nine months' training and whose business it is "to make themselves at home in any household, taking their food with the family in every way like one of themselves." Benefit subscribers to the association are divided into three classes to suit the means of the poorest. In Class 1 the annual subscription is 2s. and patients in this class are entitled to a nurse at a charge of 3s. 6d. per week for her services; in Class 2 the annual subscription is 3s. and the nurse's fee 5s. a week; and in Class 3 the yearly subscription is 5s. and the nurse's fee 7s. 6d. per week. Non-subscribers may obtain the services of the association's nurses, but in their case the fees are higher and the nurses are liable to be withdrawn if needed by members.

Is Hernia an Accident?

Since the advent of the Workmen's Compensation Act there is no disease that has not been supposed to be due to some antecedent accident and coroners' inquiries have become much more frequent in consequence. In the case of a miner, aged 53 years, who was admitted to the Newcastle Infirmary suffering from strangulated hernia, and who died, a certificate of death was granted by the house surgeon and the body was taken away by the friends to the patient's home, a distance of 16 miles from Newcastle. Owing to some suggestion that the condition was due to an accident it was decided to hold an inquest and the body had to be returned to Newcastle. Meanwhile the coroner wrote a strongly worded letter to the house committee of the infirmary complaining of the conduct of the house surgeon who, he alleged, by signing the certificate had made a very serious error. At the adjourned inquest the evidence clearly showed that the man had suffered for some time from hernia and that the alleged accident was in no way responsible for his death. It was also clearly shown that the question of an accident was never raised until after the removal of the body from the infirmary and that therefore the house surgeon had very properly signed the certificate. The coroner informed the jury that when he wrote the letter complaining of the house surgeon's action he was under the impression that the latter knew of the alleged accident.

"Hospital Management: A Warning."

With this title a very outspoken article has recently appeared in the *Newcastle Daily Journal* from an anonymous correspondent. As the new infirmary nears completion all the efforts of the subscription committee have been directed to raising the income by increased levies from the workmen in our large factories and collieries, and it is against this policy that the above correspondent sounds a note of warning. It is not contended that it is wrong to accept a regular contribution from a workman who has been a recipient of the benefits of the institution, but it is strongly contended that such contributions should be entirely voluntary and not in any way of the nature of a "levy."

The writer says: "I admit that this has now become a very complex subject and as I speak from the standpoint of one the greater part of whose life has been spent in active hospital work I have perhaps had better opportunity of seeing the disadvantages of the present scheme and I have also realised that this scheme has now obtained such a hold of hospital managers that unless a sincere effort is made to arrest its growth it will not be very many years before our hospitals are turned into what will be practically *workmen's clubs*." Continuing, the writer traces the history of hospitals in this country and contends that whereas they ought still to administer to the sick and injured poor, whose *only claim* ought to be *sickness and poverty*, they may legitimately be allowed to benefit a class of patient who has come into being during the last 30 years—the man of small means who can pay for ordinary medical attention but whose purse will not run to the length of paying for some necessary operation and the concomitant skilled nursing. By the increasing tendency to the coöperative support of our hospitals by the working men it is becoming more and more difficult for the class of case mentioned to benefit by the charity, for the working-man government of such institutions is further tending to bring them to the level of sick benefit societies, ever ready to administer to their members, but to them only. "I have more than once known patients arrive at the hospital with such an injury as, say, a simple fracture of the arm, and 'demand' a bed for their reception and occupation until such time as they had completely recovered, and because their request was very properly refused their fellow workmen have threatened to stop their subscriptions." As a result of this use of our hospitals as benefit institutions it is contended that it has now become necessary to build large general hospitals supported from the rates in connexion with workhouses for the treatment of the sick poor who should rightly be treated in the infirmaries originally intended for them. In many hospitals the first consideration comes to be whether the applicant contributes his penny a week to the funds of the institution rather than the necessities of his case. "In my opinion, this condition of affairs must cease or of a surety it will be no long time before we have our hospitals entirely converted into workmen's clubs with a majority of workmen on the boards of management." As further bearing on this question it is interesting to note that at the annual court of governors of the Royal Infirmary it was decided to increase their representation by an addition of four working men governors to their number on the committee.

Alteration of the Constitution of the "Staff" of the Royal Infirmary, Newcastle-upon-Tyne.

At a meeting of the house committee held on March 1st the following motion was adopted:—

That the "staff" to whom questions may be referred by this committee or from whom recommendations may be received shall be the honorary physicians and surgeons, the honorary assistant physicians and surgeons, the honorary physicians in charge of special departments, and the honorary pathologist.

This means that the "staff" who form the medical board shall in future consist of the whole of the medical and surgical staff instead of the four full physicians and four full surgeons as heretofore.

Vaccination and Small-pox.

In the report of the medical officer of health to the Willington Quay urban district council it is stated that during 1905 there were no less than 39 cases of small-pox notified. Of this number two were fatal, one male 25 years of age and one female eight weeks old; both were unvaccinated. Of the remainder four were unvaccinated and were all severe cases; the rest had all been vaccinated and were more or less modified, the majority being only slightly affected.

The Fees of Colliery Surgeons in Northumberland.

Since my last note on this question in THE LANCET of Feb. 3rd, p. 341, affairs have moved a step further in that the Northumberland Miners' Association after a discussion lasting four hours has decided by 37 votes to 21 not to abolish the doctors' fees committee, which means that it intends to continue the agitation to obtain the desired reduction from 9d. to 6d. per fortnight. But though this decision shows that the men's leaders who desire to continue the struggle are in the majority, and there are determined men

among them who look upon the success of their side as vital to the interests of the Miners' Association, it does not follow that they will be supported by the general body of miners who now are asked to ratify by ballot the decision of their leaders. There is a deep-rooted feeling among large numbers of the men that this question is outside the scope of the association and that individual collieries ought to be allowed to settle the matter in their own way. In fact, the lack of unanimity displayed by the speakers and the result of the voting at the Miners' Association are but an indication of a much greater lack of unanimity which exists among the men. On the other hand, the medical men are solidly united and at their last meeting it was unanimously decided to continue to resist the attempted reduction. It has been urged by a section of the miners' supporters that this struggle was but the thin edge of the wedge and that the medical men ultimately aimed at making the fee 1s. or even 1s. 6d. per fortnight. This suggestion was not heard of until brought forward by the men themselves and that it forms part of the medical men's programme has been officially denied. Meanwhile, so far as the individual collieries are concerned, the dispute goes favourably for the medical men and in very many districts the miners have unanimously decided to pay the old 9d. rate. At Seghill, Ashington, and Throckley other medical men who have agreed to work at the lower rate have been brought in by the men, but already a great many of the miners—at Ashington nearly 50 per cent.—have returned to their old medical men—of course, at the old rate. Nevertheless, those who know the miners' leaders best and who are able to judge of the progress of the dispute say that it is not yet ended and that it behoves all the medical men affected to continue to stand united.

March 12th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Glamorganshire Farm Colony.

DURING the past two years the Poor-law and other public bodies in Glamorganshire have been considering both individually and in conference the question of dealing with vagrants and with the unemployed generally. In January, 1905, an offer was made by Mr. Joseph Fels to place at the disposal of the Poor-law authorities in the county an estate of at least 100 acres for the purpose of establishing a labour colony. This proposal met with considerable favour at the time and was apparently not given effect to only because it was thought that the Government was about to introduce a scheme applicable to the country as a whole. The last conference of public bodies in the county to consider the subject was held in the autumn of last year under the presidency of Mr. Keir Hardie, the Member of Parliament for Merthyr Tydfil. A committee appointed by this conference has now drawn up a report the recommendations of which, it is hoped, will be endorsed by the public authorities concerned. The scheme embodied in the report includes the establishment of a farm colony providing employment for 100 persons who would be housed in buildings built of wood or iron such as are usually erected on large public works where navvies in any great number are employed. These buildings are estimated to cost £1000. The work suggested is that connected with market gardening and the keeping of pigs and cows. The staff proposed for the management of the colony is to consist of a labour master, a matron, and an assistant master, together with a medical officer, the last-named presumably to be a medical man practising in the neighbourhood, for his remuneration is fixed approximately at £40 per annum.

Small-pox in Bristol.

During the present year there have been 14 cases of small-pox in the city of Bristol. Dr. D. S. Davies, the medical officer of health, attributes the whole number to the circulation of infected rags and to the same cause is no doubt due a case which has occurred among the workpeople employed at a paper factory in the adjoining district of Warmley. The outbreak can scarcely be said to be epidemic, a circumstance which is in great measure due to the careful application of means for the prevention of the spread of the disease once its presence is made known. A principal part of the methods employed consists of the search for "contacts" and when

found their vaccination and observation during the incubation period, while lines of possible infection are followed up through personal communication—laundry, pawnbroker, or any other effective agency—as experience or the circumstances of the case dictate. In two recent cases as many as 617 "contacts" were kept under observation. In the years 1893 and 1894 there were notified 265 cases of the disease, but since then, with the exception of the years 1899 and 1900, when not a single case occurred, there have been only scattered cases which have been limited either to the initial case or to one or two offshoots of these.

Abergavenny Victoria Cottage Hospital.

The Abergavenny dispensary was established in 1828 and in 1902 was amalgamated with the cottage hospital which was founded in 1889. The combined institution has accommodation for seven in-patients, and the report for 1905, which has just been issued, shows that there were 89 patients treated in the wards during the year. The committee appears to deplore a falling-off in the number of out-patients treated. The average cost per bed was £79, a proof of economical management. The financial report reveals a balance of income over expenditure amounting to £108.

"Miners' Phthisis" in Cornwall.

In his annual report upon the sanitary condition of the urban district of Camborne the medical officer of health (Mr. J. Telfer Thomas) deals at some length with the incidence of pulmonary tuberculosis in the district. The population of Camborne is 14,726 and has been practically stationary for nearly 20 years. During 1905 the death-rate from pulmonary tuberculosis among the inhabitants other than the tin miners was 1.4 per 1000, about equal to that which prevailed in the rest of England and Wales, but the 18 deaths from the disease which occurred among the miners raised the rate to 2.64 per 1000 of the population. These rates, it appears, do not vary much from those which have been recorded in previous years. Mr. Thomas, who is certifying factory surgeon as well as medical officer of health, states that the great majority of cases among the miners occur in those engaged in rock drilling. He considers that the inhalation of stone dust is the cause of the disease in these men and he thinks that it would be ultimately stamped out if the special rules made by the Home Office were rigidly enforced, a result which can only be achieved if the miners cheerfully coöperate with the officials. As a large proportion of the deaths occur in men who have contracted the disease abroad he suggests that similar regulations should be enforced in the Transvaal and other districts abroad.

Boards of Guardians and the Vaccination Act.

The subject of vaccination has again been engaging the attention of guardians in the West of England. The board of guardians of Camberwell, London, has sent a resolution to various boards of guardians asking them to support a resolution to be submitted to the Local Government Board for the repeal of compulsory vaccination, for placing vaccination officers entirely under the control of the guardians, for paying them by salary instead of by fees, and for giving a longer time in which to obtain an exemption certificate. Most of the boards did not seem to favour the resolution but adopted the course of the Liskeard (Cornwall) guardians who determined to allow the resolution "to lie on the table"; some followed the Kirsbridge (Devon) guardians who referred the matter to their vaccination committee.

March 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Water Scarc in Edinburgh.

The chief sanitary inspector of Edinburgh, Dr. A. M. Williamson, has reported at length on the "water-flea" scare, to which reference was made a few weeks ago. The insect is, in the first place, not a "water-flea" but is known commonly as a "springtail" owing to the power of jumping which it possesses. It was found in a small number of the cisterns examined. It was not carried to the cisterns from the source of supply and there was no defect in the cisterns in which it was found. So far the investigation was negative and satisfactory but the source from which the insect got into the water had still to be determined and it was found that its

breeding place was in the street hydrants. These hydrants are mostly of the ball type and the somewhat startling discovery was made that under certain conditions not only the "springtail" but any other contents of the hydrants readily gained admission to the main water-supply. The water in the main pipes could not only be contaminated by street soakage but was in fact being so contaminated. For years the ball hydrants, as they became worn out, have been replaced by valve hydrants which are regarded as thoroughly efficient; but there are still hundreds of the inefficient type still in use. Dr. Williamson suggests that until the faulty hydrants have been replaced steps should be taken to render them safe. The town council proposes to have all the ball hydrants removed in something like three years. Meanwhile the council is looked to to make them so secure that no leakage can take place into them. The sanitary authorities will certainly be supported by the public in insisting upon this being done at once, for while the scare of the water flea has been laid the idea of the city's drinking water receiving street soakage is repulsive in the extreme. That such contamination can be a serious source of danger will not be questioned and the public will doubtless be grateful to the harmless insect that was the means of revealing the greater danger.

Sir William Turner.

Principal Sir William Turner has completed 50 years' connexion with the University of Edinburgh. He came to Edinburgh as a demonstrator of anatomy, he became a professor of that subject, and was for many years Dean of the medical faculty, and a few years ago he was made Principal of the University. In view of this long academic connexion with the University the Students' Representative Council has decided to originate an appeal to the students and general council of the University in order to secure that the occasion shall be marked in some suitable way. A committee was appointed to carry this into effect.

Aberdeen Dispensary: Annual Report.

The total number of cases treated was 12,267, a decrease of 625 as compared with the previous year. The number of ordinary and zymotic diseases amounted to 9290, a decrease of 825. During the year an unfortunate recurrence of typhus fever took place, no fewer than 18 cases having come under the notice of the medical staff; but there were few cases of whooping-cough and measles, of which an epidemic prevailed in the previous year. Vaccinations and revaccinations numbered 118, a decrease of one, and dental operations 579, a decrease of 26. The special ear, throat, and nasal cases were 570, a decrease of 14. 330 cases of diseases of women were treated, a decrease of 16. In the eye department 930 cases were treated, an increase of 186. The patients treated at home numbered 2856, a decrease of 333, and the number of visits paid was 8441, a decrease of 1297. The number of medical students who paid for admission to the general practice of the institution was 88, an increase of 42. The prescriptions dispensed numbered 47,203, a daily average of over 151. The cost of medicines, exclusive of what was supplied to the Maternity Hospital, was 4409 7s. 1d., a decrease of £12 16s. 7d. The Aberdeen District Nursing Association continues to render most valuable services to the institution, attending 136 cases, an increase of 26, and paying 1935 visits, an increase of 117. The Association for Improving the Condition of the Poor also afforded valuable aid, no less than about 267 of the patients having received aid. The number of cases treated in the Maternity Hospital was 205 and in the homes of the patients 245, a total increase of 71. Of the out-door patients 200 were attended to by the hospital nurses and 45 by the midwives attached to the General Dispensary. The committee of management regrets that during the year the Maternity Hospital lost the very able services of Miss Scott who, with the view of taking up private work, resigned the post of lady superintendent which she had held for over eight years. During that period Miss Scott had carried out her duties to the entire satisfaction of the committee. In filling up the vacancy by the appointment of Miss Alice M. Beattie, a lady who had been for years in Queen Charlotte's Hospital, London, and who had otherwise very high testimonials, the committee was very ably assisted by the ladies' committee and by Professor W. Stephenson. The ordinary income of the Maternity Hospital was £236 1s. 3d., and the ordinary expenditure was £642 17s. 3d., leaving a deficiency of £256 16s. The total debt affecting the General Dispensary and Maternity Hospital, including the balance of

£848 14s. 12., brought from the previous year's account, now amounted to £1211 16s. 4d., a debt which had been gradually accumulating and was causing the committee of management considerable anxiety.

March 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal University of Ireland.

THE Senate of the Royal University of Ireland met on March 7th, when a letter was read from the Earl of Meath intimating that for reasons stated therein he had placed his resignation as Chancellor of the University in the hands of his Excellency the Lord Lieutenant. The following motion was unanimously adopted:—

The Senate have heard with great regret that the Earl of Meath has resigned the office of Chancellor of the University, and they take this opportunity of expressing their high sense of the whole-hearted devotion with which he applied himself, during the period for which he held office, to the work of the University and to the promotion of its interests.

A motion, to consider which the meeting was specially convened, was proposed by the Most Rev. Dr. O'Dwyer, Bishop of Limerick, seconded by the Rev. Dr. Hamilton, and adopted:—

That the report of the Royal Commission, in its animadversions on this University as an examining body, indicated truly the essential defect in its constitution, and we believe that its reform in this respect, so as to make it a teaching University with Colleges adequately constituted and brought into organic connexion with it, is a matter of urgent need both for the University itself and for the interests of higher education in this country.

It was ordered that copies should be sent to his Excellency the Lord Lieutenant, the Prime Minister, and the Chief Secretary.

Medical Studentships in Trinity College.

On March 6th an important matter in relation to the regulation of certain trust funds bequeathed to Trinity College by the late Mr. William Chapman Begley, and the codicil of Mrs. Jane Begley, his wife, was adjudicated upon in the Chancery division by Mr. Justice Barton. A sum of £5200 was left in order to establish and endow four studentships tenable for four years to be allocated amongst students of medicine under certain prescribed conditions. It appeared that owing to the extension of the medical course by the General Medical Council since the death of the original testator students entered the School of Physic much earlier in their arts course than formerly and it became necessary to alter the conditions of the trust in consequence. The board of Trinity College was of opinion that the studentships should be open to all students who had passed their final senior Freshman's examination. Mr. Justice Barton said that there would be no difficulty in modifying the scheme as suggested and granted the application. These studentships, in addition to those recently endowed by the generosity of Sir John Nutting, will afford an additional inducement to industrious students of medicine to join the medical curriculum of Trinity College.

Outbreak of Typhus Fever in Ballina.

At a meeting of the board of guardians of Ballina, county Mayo, held on March 5th, the medical officer, Dr. R. Macaulay, reported that there were 23 cases of typhus fever in the hospital from the town besides others not removed. Sir J. Acheson MacQuillagh, Local Government Board inspector, has paid a special visit to Ballina in order to induce the local authority to adopt stringent preventive measures.

Benn Ulster Eye, Ear, and Throat Hospital.

At the annual meeting of the friends of this hospital held on March 6th it was reported that the improvements suggested at the previous meeting had been carried out in regard to thorough renovation of the hospital and equipment so as to bring it into line with modern hospitals. During the year 329 patients were treated in the wards (an increase of 56 on the previous year), and in the extern department there were 2045 new cases. Financially the hospital was £140 worse off than it was at the same date last year, but this was owing to the expenditure on equipment and renovation which were urgently needed. The extern operating room is now among the best in the kingdom to be found in eye and ear institutions. The efficient medical staff have now, as one of the speakers stated, all those appliances necessary to enable them to do their work well.

March 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sero-therapy in Paroxysmal Hæmoglobinuria.

At a meeting of the Society of Biology held on Feb. 24th M. F. Vidal and M. Rostaine communicated the result of some researches which they had made into paroxysmal hæmoglobinuria. These researches went to show that the cause of the outbreak of hæmoglobinuria which is brought about by exposure to cold is due to an insufficiency of a certain antibody (*substance antisensibilisatrice*) in the blood. From results obtained *in vitro* they had been led to inject a certain serum into a hæmoglobinuric patient and had thus been able to prevent an attack of hæmoglobinuria after exposure to cold. In another case in which the patient was excessively sensitive to cold an injection of the serum entirely prevented the onset of an attack of hæmoglobinuria which the patient, a woman, had always been able to bring on by immersion of the hands for 15 minutes in water at 10° C. The serum used came from a horse which had been prepared at the Pasteur Institute by means of an intraperitoneal injection of human serum derived from blood drawn in the course of ordinary therapeutic bleeding or else from placental blood. The serum of the patient broke up blood corpuscles with which it was placed in contact *in vitro* when the mixture was cooled down. M. Vincent, however, working together with M. Dopter and M. Rostaine, found that the serum of patients who suffered from malarial hæmoglobinuria had not this effect. This difference in the action of the plasma from patients suffering from the two kinds of hæmoglobinuria helps to explain the different effects of calcium chloride in hæmoglobinuria from cold and from malaria. It will prevent an attack of the latter but not of the former.

A Method of Measuring the Amount of X Rays Given Off in a Given Time.

On Feb. 19th M. Gaffie gave an account of a method for measuring the amount of x rays given off in a given time. His idea is to interpose between the source of the rays and a fluorescent screen which is able to be destroyed by the action of the rays one or more shutters of an aradiochroic substance which is unequally transparent to the rays. The portion of the screen which is not protected by these shutters is rapidly altered, while the parts of the screen which are covered by the shutters are altered more or less slowly according to the degree of transparency to the rays of the shutters.

Radiography in Fracture of the Thigh.

At a meeting of the Surgical Society held on Feb. 28th M. Monod showed a radiograph of a fracture of the thigh which had been treated by Hennequin's apparatus, the apparatus having been applied by M. Hennequin himself. The radiograph showed that although functional result for the patient had been extremely good and that there was only a shortening of two centimetres there was considerable riding of the two fragments of the femur. This case shows how necessary it is to be on guard in receiving the declarations of certain patients that after fracture of the thigh, however carefully it has been treated, they are unable to walk except very badly while they pin their faith to a radiograph which may show marked riding of the two ends of the bone. This case, however, proves that even very considerable riding is not incompatible with excellent functional powers. M. Delbet, who spoke next, remarked that this photograph showed once more how the apparatus of Hennequin, like most other apparatus, could not pretend to bring about absolute reduction of the fracture so that the bony fragments were end to end. With one radiogram simply the reduction might appear perfect but one taken in another plane would always show the existence of riding of the bone more or less marked.

Intestinal Infections treated by Altering the Bacterial Flora of the Intestine.

At a meeting of the Society of Biology held on Feb. 24th M. Tissier proposed a method of treating intestinal infections by replacing in the intestine the harmful microbial flora by another kind which was inoffensive as regards the organism. The treatment began by placing the patient upon a strict vegetarian diet and during the course of the day a bottleful of water containing from 20 to 50 grammes of milk sugar was given. Finally, one or two glasses of Bordeaux wine were given containing a pure culture of the bacillus acid

paralactici or a symbiosis of this variety of bacillus with the bacillus bifidus. After some days of this treatment the stools lost all their foetid smell and it was possible to see with the microscope the progressive multiplication of an inoffensive bacterial intestinal flora. If the treatment was continued for two and a half months or so the bacterial flora of the intestine would be found to be almost entirely transformed and then the diet might be made slightly less strict.

The University of Paris.

Sundry foreigners, Doctors of the University of Paris, have recently petitioned that body to allow them to wear upon ceremonial occasions in their own country some distinguishing mark which should let people know that they possess the degree in question. The council of the University has just decided that foreigners who are Doctors of the University shall be henceforward authorised to wear, in addition to the academical dress of any foreign university to which they may belong, the *épitoge* with three rows of ermine, which is part of the academical dress of the University of Paris.

March 10th.

ITALY.

(FROM OUR OWN CORRESPONDENTS.)

Importation of Medicinal Substances and Compounds into Italy.

A VERY important change is pending in regard to the importation into Italy of drugs from abroad. The Department of Sanitation has issued a circular warning importers that the present system of unrestricted importation will cease at the end of the current year. The reasons given for the change are the great and ever-increasing importation of foreign drugs, the impossibility of exercising an efficient control on the manufacture of foreign preparations, and the abuses and resulting inconveniences and dangers which are said to have arisen from the introduction by unscrupulous speculators of inferior and adulterated products to the detriment of the public health. It is therefore intended to put rigorously in force Article 14 of the Tariff Law of Nov. 24th, 1895, No. 629, which prohibits the importation of all medicines and medicinal compounds not approved by the Superior Council of Hygiene. After Jan. 1st, 1907, the introduction into, and sale of drugs in, the kingdom will no longer be allowed without the previous consent of that council, the approval of which may, however, be obtained by those interested by means of a formal application to the Minister of the Interior.

Behring's Method of Immunisation against Bovine Tuberculosis.

In the early part of last year a series of experiments was instituted at Mortara, under the direction of Professor Mazzini of the Veterinary School of Turin, with the object of testing the value of Behring's method for immunising cattle against tuberculosis. The results of these experiments have been uniformly successful, but in order to make the method more widely known and to call more attention to its importance the last five of the immunised cattle were taken a few days ago to the Sero-therapeutic Institute of Milan and there slaughtered in the presence of a large number of persons interested. In only one of the five were tuberculous lesions encountered and in this one some cicatrices were found due probably to tubercle which had developed during the course of the experiments but which had evidently shrivelled up under the influence of the remedy. The necropsy of one of the oxen was anticipated with special interest because of the great amount and virulence of the immunising material which had been employed in its case, and which under ordinary conditions must after so many months have developed a general tuberculosis. On the contrary no trace of tubercle was found in this particular animal. A sixth animal, intended to serve as a "control," had received injections of tuberculous material without previous immunisation. The necropsy in this case revealed lesions which bore the naked-eye characters of tubercle. A telegram was despatched to the Sanitary Department at Rome and to the Minister of Agriculture and Commerce informing them of the results of the experiments and requesting Government aid for a further prosecution of the experiments in Milan.

Pellagra in the Province of Rome.

At a meeting of the Pellagra Commission for the Province

of Rome held recently it was stated that two new centres of infection had to be added to the four already existing in the district, pellagra having broken out in the communes of Palestrina and Cave. The number of pellagrous persons in the six communes which have now to be subsidised under the Act totalled about 180. Fortunately the cases were not very grave and might be easily dealt with but for the ignorance and suspicious attitude of the population, the apathy of the local authorities, and in some cases the deliberate opposition of certain persons to the formation and activity of the local committees. Only in the commune of Onano, the most afflicted of all, a commune, moreover, without agricultural or other resources, were the importance and utility of the campaign against pellagra appreciated and the efforts of the Commission seconded with intelligence and alacrity. Here the number of pellagrous persons was reduced by 75 per cent. and the severity of the disease was greatly mitigated, while the maize desiccator, the baker's oven, the sanitary arrangements, and the cooperative store were all working admirably. In the commune of Piglio, on the contrary, the desiccator supplied by the Agricultural Department could not even be set up, for no one was willing to furnish a site for it either gratuitously or for hire. All that could be done was, with the help of the "medico condotto," to distribute good bread to the patients. At Arcimazzo a desiccator had been installed but not the oven, and as to Ripi no information was obtainable from the local committee in regard to the progress of the measures recommended by the Commission. The difficulties encountered in the province of Rome are not greater but rather less than those met with in other districts where the incidence of pellagra is much heavier. The Pellagra Act of July 21st, 1902, and the Ordinance of Nov. 3rd, 1903, make provisions which, if only faithfully carried out, would prevent any fresh outbreak and in time entirely stamp out the disease. The State contributes through the Minister of the Interior and the Agricultural Department about 300,000 lire (£12,000), one-third of which sum is divided by the former into subsidies for the various pellagrous institutes, the balance being used by the Minister of Agriculture to encourage institutions of an economic or preventive kind, or to stimulate improvements in practical agriculture—as, for instance, the substitution of the ordinary maize crop by leguminous or forage crops. The chief pellagrous institutes are those of Mogliano Veneto, Città di Castello, and Inzago, Milan. Each of these forms a kind of agricultural colony of which those well enough to work are given practical instruction in agricultural operations. There are also institutions for the pellagrous at Ponton (Verona) and at Sanseverino Marche, but these are of minor importance. The greatest difficulty in the way of the prevention of the disease is the importation from abroad of unwholesome maize. Hitherto a 5 per cent. admixture of damaged grain has been allowed but the Commissioners feel that there should be no tolerance of diseased maize and now demand the strict application of the law which forbids the introduction of diseased or immature maize and recognises no percentage of tolerance whatever.

Death of Professor Pasquale.

By the death of Professor Pasquale early in January last Rome has lost a teacher who has been at the head of its Obstetrical School for 30 years and who, indeed, may be regarded as its founder. Originally a surgeon in the Roman hospitals, he accepted the chair in the Obstetrical Clinic instituted in 1865 by Pius IX., in succession to Panunzi, and continued in occupation of it until his death at the age of 81 years. Although a man of industry and devoted to his specialty he has left behind him no writings of importance, having been content to record the results of his large experience in the form of fugitive contributions to medical societies and journals from time to time. Of late, while his advanced age rendered it impossible for him to discharge satisfactorily the duties of his chair, his activities were restricted chiefly to his hospital work at San Giovanni and at the University Obstetrico-Gynaecological Clinic. He also took part in planning the beautiful obstetrical department in the new Policlinico which he has not lived to see finished and the completion of which now falls into the very competent hands of his successor in the chair, Professor Pestalozzi of Florence, whose appointment (already confirmed) gives universal satisfaction.

A Garibaldian Sister of Mercy.

The week now closing has witnessed two ceremonies that have concentrated on Florence the mind and soul of Italy,

the centenary of the birth of Elizabeth Barrett Browning and the funeral obsequies of Jessie White Mario. Both had made the Tuscan capital their home, both died there after a life dedicated to Italy, and both will keep their place in all Italian hearts till Italy herself shall have ceased to be. Mrs. Browning was the poetess of the "Risorgimento," and her verse, now pathetic, now exultant, now blending both moods in beautiful harmony, is hardly more familiar to the English-speaking world in the original than to the Italian in translation. Appropriately, therefore, on March 6th, her birthday, at the Casa Guidi, her residence, both nationalities met in common sympathy to place a wreath upon the tablet that commemorates her life and work. Hardly was that ceremony over when Mrs. Browning's friend, the Signora White Mario, passed away, closing a life which was itself a poem translated into action. Drawn to Italy in the early "fifties" of last century Miss White soon found the efforts of young Italians for their country's unity and independence more thrillingly attractive than the literature and art of her early predilection and in Genoa, where she met her future husband, Alberto Mario, she became the friend of Agostino Bertani, the brilliant young surgeon, with whom she was thenceforth to be associated as chief nurse on the medical staff of their leader Garibaldi. After the crushing defeats of Magenta and Solferino the Austrian Kaiser came to terms with the Emperor Napoleon and Victor Emanuel at Villafranca, but that half-hearted treaty had no effect in curtailing the now triumphant policy of Cavour, while, much to the Emperor's chagrin, the revolutionary wave set strongly southwards with Garibaldi and his "Thousand Redshirts" on its crest. In the two Sicilies from the day of Marsala to that of Volturno the Signora Mario was as fearless in relieving the wounded under fire as she was indefatigable in tending them in the ambulance, gaining experience from field to field under the eye and inspiration of Bertani, his clear, precise instruction effectively reinforcing her "*sagacité de cœur*." In March, 1861, Italy's independence was proclaimed but her unity still required the absorption of the Venetian territory, and again in 1866 Victor Emanuel took the field—this time with Prussia as his ally. Coöperating in the Tyrol with the regular army, confronting Austria in the plain, Garibaldi repulsed the Kaiser's troops at Bezzecca, where again the Signora Mario, now a well-trained nurse, assisted Bertani and his young medical recruits in relieving and tending the wounded. The cession of Venetia to Italy left but the Patrimony of St. Peter to round off her unity. Garibaldi, on his own account, made the raid upon Rome, which was checked by the French "*chassepots*" at Mentana. In those days of defeat and disaster the Signora Mario was active, not only in ambulance and hospital but as an envoy between Garibaldi and the Vatican, effecting exchanges of prisoners between the two camps and giving evidence of qualities hardly less characteristic of the man than of the woman. At last the dark day of Mentana was avenged. The Emperor Napoleon succumbed at Sedan, the French garrison at Rome was replaced by the Italians under Cadorna, and the flag of United Italy was hoisted on the Capitol. France, now a Republic, claimed all Garibaldi's sympathies, over-run as she was by the victorious Germans. Marching with his Redshirts to her aid he won, over General von der Tann at Dijon, the single victory that relieved the long tale of French defeats and, again, he had the Signora Mario to thank for skilled and intrepid assistance on the field and in the ambulance. With the close of the war and the cession of Alsace-Lorraine the knight-errant and his Sister of Mercy returned to Italy and there, at the instance of the Senator Pasquale Villari (the historian of Savonarola and Machiavelli), she threw herself into another and hardly less arduous campaign—that of rescuing and rehabilitating the "lapsed masses" in the great Italian towns, especially Naples. Taking as her motto "*Res Sacra est Miseria*," she made the round of the Neapolitan prisons, the court-and-cellar population, the destitute, vicious, criminal proletariat of that seething hotbed of misery, undeterred by an epidemic of typhoid fever then making havoc of its people. All this beneficent work she has told in a volume of thrillingly pathetic interest entitled "*La Miseria in Napoli*"; but the work was already sapping her splendid constitution and she was called away to Rome to join her husband now in the first stage of malignant disease. One by one her old companions-in-arms had dropped, or were dropping, away.

Garibaldi and Bertani had gone to their rest and the laid an *immortelle* on the tomb of both in her deeply interesting biographies of each. Then her husband died, closing a life as brilliant in literature as it was romantic in war, after which, for the later years of her life, she made Florence her home. Never affluent—her husband's impoverished estate at Lendinara affording her little more than a humble *pied-à-terre*—she earned a hard-won livelihood by teaching English, as lady professor of that language and its literature, at the Circolo Filologico. Still her pen was active and she drew largely on her past contributions as correspondent to the *Daily News* for material to be wrought up into volumes—of biographical and historical interest—on the epoch-making times she had lived through. Some of these have already seen the light and will always be consulted by the student of Mazzini's propaganda and Garibaldi's campaigns. But the series is incomplete; the materials only are available for later hands "to crown the edifice" of the undertaking. For within the last year her strength had been visibly on the wane till, as the result of a nobly inspired but fatal struggle to meet her teaching engagements, she succumbed to pneumonia on March 6th, in her seventy-fourth year. All that was most distinguished in Florence, of every shade of party, was gathered together at her funeral, and before her cremated ashes were consigned to their destination beside her husband's at Lendinara, an eloquent and deeply touching *oraison funèbre* was addressed to the assembled mourners by her old friend, the Senator, historian, and statesman, Pasquale Villari.

March 12th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Increase in the Number of Medical Students.

THE constant fall in the number of medical students, which was a marked feature of the university reports for the last seven years, has ceased and is now replaced by a rising tendency. According to the figures published by the Ministry of Education in the winter semester of 1905-06, which terminates in March, there were 3133 students matriculated in all the seven medical universities of Austria, being an increase of 141 students as compared with the figures for the preceding year. The chief cause of this increase is the fact that a large number of foreign students and ladies have attended the courses. The number of graduates taking the degree of M.D., with which the medical curriculum is finished here, is still constantly declining, not only on account of the reduced number of medical aspirants but also because medical study is being relinquished by more young men than formerly for the sake of civil service appointments or commerce.

Medical Attendance on Members of Parliament.

The present Parliament, which is nearing its end, includes nine medical practitioners amongst its members; moreover, the present Speaker of the House, who is here called the President, has been a very active medical student and is well known in the wards of the General Hospital. As members of the House have several times been seized with fainting fits and other illnesses during prolonged sittings, these nine gentlemen have formed a sort of medical league within the Parliament. Hitherto it had not been deemed necessary to make arrangements for any medical service at all but the help rendered by the small number of professional men has been appreciated in such a degree that perhaps the legislators will now give more attention to the wants of our profession. An unexpected episode in connexion with this subject is that the surveyor of taxes has claimed a certain amount in respect of a small dispensary which has been fitted up for the use of the members in case of need, but there is no probability that this tax will be paid.

A Unique Case of Cystic Disease of the Parotid Gland.

At the last meeting of the Vienna Medical Society Professor Pollitzer showed a man who had sought advice at his out-patient department on account of carache. Whilst he was being examined some liquid viscid discharge came out suddenly from the meatus externus and the patient declared that he felt much better. As the discharge continued for months he returned to the clinic, when it was noticed that on making pressure behind the mandible or

during the acts of eating or mastication a clear serous liquid came away in large drops from the meatus. There were no other symptoms of subjective discomfort but the discharge was very troublesome when the patient was in company. Examination with the otoscope and tuning-forks gave normal results. In the meatus ossseus there was a small depression which led to a canal directed towards the parotid gland. Pressure on the preauricular region caused the appearance of liquid in the depression. The chemical examination of this liquid proved it to be saliva, capable of inverting sugar. Professor Pollitzer's opinion of this unique case is that a cyst of the parotid gland had perforated the thin layer of bone so often met with in this region when ossification is deficient. Operation was not advisable, as it was highly doubtful whether the cyst had any communication with Stenson's duct.

Elephantiasis of the Leg.

At the same meeting Professor von Eiselsberg showed a leg affected with elephantiasis and enormously enlarged. It had been removed by an operation from a man, 24 years of age, who had been ailing since his fourteenth year and had been obliged to sit very much as his left leg became so weak and enlarged that he could not move about. For the last three years he had been confined to bed. His face was very pale and marked leucocytosis was present. The x rays showed a dislocation of the hip-joint, dis-tasis of the knee and absence of the lower half of the tibia and fibula. The tarsal and metatarsal bones were only fragmentary. As an operation was urgently requested by the patient amputation through the hip-joint was performed but he died soon after it. The limb weighed 46 kilogrammes (100 pounds) and sections through its substance showed the absence of muscular tissue, beginning from the middle of the calf. There were large cavities filled with lymphoid liquid present between the different layers of the former muscles. Microscopic sections showed only hypertrophy of the connective tissue. Elephantiasis is very rare in European countries and the cause of the cases which occur is not definitely known, but in tropical regions certain parasites are responsible for the disease.

A New Operation in Degeneration of Nerve Trunks.

Dr. Gerau has suggested a novel way of obtaining compensation for loss of function of certain motor nerves by saturating the muscle, the nerve of which was destroyed, to another muscle having a different nervous supply with the object of bringing about innervation of both muscles by one nerve. A man who had suffered from acute pain in the left shoulder-joint had slowly but steadily lost control over certain movements of the arm, so that after five months he was unable to lift it. The galvanic and faradic reactions of the circumflex nerve showed that it had undergone total destruction (neuritis), so that the deltoid muscle was rendered useless. Dr. Gerau in the operation exposed the deltoid and trapezius muscles by a long incision from the side of the neck over the acromion down to the arm. The insertions of the trapezius and deltoid on the scapula were divided, the deltoid was pushed underneath the trapezius, and they were fixed together by strong sutures. After the closing of the wound in the skin, the arm was bandaged at a right angle to the thorax in the position of abduction and two weeks after the operation the arm was subjected to the faradic current; massage and active and passive movements were soon applied and after three months the patient could lift his arm well. Seven months after the operation the arm could be as easily moved and used as the sound one. The deltoid muscle contracted with the trapezius but the circumflex nerve did not respond to faradic irritation. The contraction of the deltoid was normal by voluntary action. The application of an electric current caused only a slight contraction. The spinal accessory, or eleventh cranial, nerve had therefore partly replaced the circumflex nerve in its action.

March 12th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Epidemic Cerebro-spinal Meningitis.

This disease is rare in Egypt though it is sometimes met with in the Sudan and is said to have been the cause of the Mahdi's death. Curiously enough, last spring, at the very time when epidemics were occurring in Germany and also at

Boston and New York, there were several sporadic cases here. Six adults and three children were admitted to the infectious hospital near Cairo, all being prisoners from three different prisons; four of them died and presented typical post-mortem appearances, while Dr. Dreyer, for the first time in Egypt, found the diplococcus by lumbar puncture in all nine patients. At the same time there were several cases in the Egyptian army and two others were admitted into the German hospital here. An additional patient, a Greek boy, aged six years, showed symptoms which were thought by several medical men to be due to cerebro-spinal meningitis. Arrangements were made for lumbar puncture to confirm the diagnosis, when it was reported that the boy had passed an ascaris lumbricoides in his feces. Santonin was therefore administered, 39 ascariides were expelled per rectum, and the nervous symptoms immediately disappeared.

Relapsing Fever.

This disease used to occur in epidemic form in Egypt every spring sometimes with and sometimes without typhus fever. But now, though typhus fever is still present in some of the villages, relapsing fever is never discovered in spite of repeated blood examinations. Five Turkish soldiers recently suffered from it but they were all imported cases. Possibly the constant disinfection against plague has in some way lessened the number of bugs and made the conveyance of the relapsing fever spirillum more difficult.

Students on Strike in the Government Schools.

Some disaffected students in the Law School, egged on by professional agitators, threatened this week to leave the school unless all their demands were complied with. The Government has agreed to inquire into their grievances and to redress them if necessary but in the meantime four youths have been expelled and their comrades are in a very excited state. The scholars of the Agricultural College joined in the strike out of sympathy and that school has been closed till next October. The medical students threatened to join the malcontents though they freely confessed that they had not a single grievance, but I am glad to say that I saw them all hard at work yesterday and wiser counsels seem to have prevailed among them.

Abscess of the Liver among the British Troops.

By the courtesy of the principal medical officer I have had the opportunity of compiling some statistics relating to diseases of the liver in the army of occupation during the ten years 1895-1904. The troops in the command averaged during those years a strength of 4415, three quarters of whom were in the Cairo command, while the remainder were divided between Alexandria, Khartoum, and Cyprus, where there is a detachment of about 100 men. The annual admissions for abscess of the liver varied from two to eight, giving an average of 4.6; all except two were operated on and the high mortality of 56.5 per cent. resulted. The ages of the fatal cases varied from one of 19 to another of 40 years. No cases were recorded among the officers, women, or children. The statistics of dysentery for the ten years gave 429 cases of this disease treated in Cairo, 333 in Alexandria, and 37 in Khartoum (six years only). During the year 1898 the cases were trebled in consequence of active service in the Sudan. The English regiment now stationed at Khartoum during the whole year continues to enjoy great freedom from sickness.

Port Sudan.

The harbour has now been officially opened 25 miles from Suakin and a new railway exists connecting for the first time the Nile and the Red Sea, making a route 900 miles shorter than the old journey from Berber to the Mediterranean. It was laid in 14 months at a cost of £2450 for each of the 331 miles of main line. All the water for the working parties had to be conveyed in special tanks, distilled from the sea. The new town which will quickly spring up is to be dependent on well water and is to have a drainage system.

The Egg Industry.

Every year between November and March some 70,000,000 eggs are exported from Alexandria to London, Liverpool, Glasgow, or Hull, besides 3,000,000 or 4,000,000 which go to France, Austria, and other countries. This export trade has been gradually growing during the last ten years, though the fowl cholera of last winter checked it very seriously. Now, fortunately, the epidemic seems to have collapsed. The eggs for shipment are mostly bought in Upper Egypt from the incubating rooms which have been

in use in this country for hundreds of years. As the eggs are very stale before they leave Alexandria it is surprising that merchants should be able to sell them on arrival in England and Scotland, but apparently any egg is considered good enough for cooking purposes.

Cairo, March 4th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

A Humane Enactment.

A LAUDABLE decision has been arrived at by the prefecture of the Ottoman capital with the view of protecting horses from misuse and ill-treatment. The Turks are on the whole very kind to animals and shield them from injury by every possible means. At almost every Turkish house in Stamboul there is to be found a small receptacle where water is poured in every day for the use of the innumerable street dogs. A Mussulman, building his dwelling place, rarely forgets to attach some contrivance for sheltering birds, pigeons, sparrows, &c. I am assured that a cabman who overruns a dog, heedlessly enjoying its *dolce far niente* in the middle of the street, has to pay a fine of several piastres, while the Sultan is believed to spend a large sum on the feeding of the numerous canine scavengers around his kiosks and palaces. There are, however, a good many employers of horse labour who use their animals in a cruel or thoughtless manner. To prevent this the employment of senile, debilitated, or diseased horses has been forbidden. Municipal agents will have difficulty in Constantinople in insuring that the measure is strictly adhered to—that the load never exceeds the amount proportionate to the horse's strength, and so on—but anyhow the spirit which has influenced the new enactment is laudable.

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The jubilee meeting of the members of the Imperial Society of Medicine took place last week, when Dr. Antonacopoulou delivered an account of the labours of the society. The president, Dr. Stikoulis, proposed the election of four honorary members, three from among medical men in Europe and one from among the local authorities. The proposal having been agreed to, Dr. Djémil Pasha was chosen on the spot for local honour.

A Bequest of 50,000 Turkish Pounds for a Hospital.

A wealthy Armenian lady residing at Venice, Mme. Durouhi Yghlikdjian, the daughter of a former cashier of the Imperial Ottoman Mint, has sent a donation of 50,000 Turkish pounds (about £45,000) for the Armenian-Catholic Hospital St. Jacques of the city quarter Pancaldi.

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says, has been visited by a seismic catastrophe with most destructive results. A number of villages surrounding Malatia have been nearly completely destroyed by a violent earthquake of long duration. It is not the first time that this part of Turkey has suffered from such calamities.

Two Sisters who are Centenarians.

During the last census taken in Uscub, Macedonia, two sisters who are centenarians have been discovered, one being 113 years old and the other 100 years old. Both are in good health.

March 10th.

Obituary.

HENRY MATTHEWS TUCKWELL, M.A., M.D. OXON.,
F.R.C.P. LOND.

Dr. Henry Matthews Tuckwell who died recently at Oxford was a native of the city, his father having for many years been one of the leading medical men there. Educated at Bromsgrove School under the late Canon Collison, he passed thence to Lincoln College, taking a first class in natural science in 1856. After leaving Oxford he studied medicine at St. Bartholomew's Hospital and obtained his qualification to practise in 1858. A year later he won a Radcliffe Travelling Fellowship and continued his medical studies at Paris, Berlin, and Vienna. In 1866 he was appointed physician to the Radcliffe Infirmary, which post he held for 20 years. With such a training and possessing as he did a most courteous and sympathetic manner he quickly acquired a great reputation as a physician and for many years enjoyed a large consulting practice in Oxford and the neighbourhood.

It was in the very prime of life and at the most successful period of his career that a great misfortune overtook him, for in 1886 he suddenly found that he was developing glaucoma and was advised immediately to give up all work. His retirement from practice in such circumstances was the occasion for all the medical men in the district and his old teachers and friends at St. Bartholomew's Hospital to present him with a testimonial as a mark of their sympathy and esteem. It took the form of a beautifully illuminated address and a gold chronometer. The address bore many interesting signatures—such as those of Sir George Burrows, Sir James Paget, Dr. J. Andrew, and Sir William Savory—and was much valued by Dr. Tuckwell. Keenly interested in the advances in his profession, busily engaged in an extensive and interesting practice, to be suddenly debarred from all work and from the consolation of his books, must have been a heavy burden indeed to bear. His friends, however, never heard one word of complaint pass his lips and he appeared always cheerful and contented. Indeed, he set a noble example of Christian patience and resignation to all around him. His great love of music was a source of immense consolation to him and fortunately Oxford afforded him ample opportunity of indulging it. In his earlier years at Oxford a good deal of his leisure time was spent in drawing up a most admirable description of the pathological specimens of the van der Kolk collection which had been purchased for the University. He also contributed several articles of great interest to the various medical periodicals, notably one to the St. Bartholomew Hospital Reports on the Probable Connexion of Chorea with Embolism.

THOMAS DUDDINGSTON WILSON, M.A., M.B. EDIN.,
F.R.C.S. EDIN.

Dr. Duddingston Wilson died at his residence at Newington, Edinburgh, on March 8th from pneumonia after an illness of about nine days. The intimation of his death was a shock to a large circle of friends in Edinburgh, for his illness was not generally known. Dr. Wilson was widely known in Edinburgh from the prominent place he took in politics. He was for years chairman of the South Edinburgh Unionist Association. His father was a well-known practitioner on the north side of the city 30 years ago. The son graduated in medicine at the University of Edinburgh in the year 1875, having already taken his degree in arts. He was out of Edinburgh for a number of years but returned in 1883 and began practice on the south side in the district of Newington. He gathered a considerable family practice

and was much liked and valued by his patients. He was kind and liberal to the poor and ever ready to give them his professional help. As a man he was straightforward, genial, lovable, and cultured and the profession in Edinburgh is the poorer by his death.

THOMAS EDWARD WILLIAMS, F.R.C.S. EDIN.,
M.R.O.S. ENG., L.S.A., J.P.

Mr. T. E. Williams died at his residence, Abernig, Talgarth, Breconshire, on March 7th. The deceased received his medical education at St. Bartholomew's Hospital, taking the qualifications of M.R.C.S. Eng. and L.S.A. in 1863. He was admitted a Fellow of the Royal College of Surgeons of Edinburgh in 1889. Mr. Williams had been in practice for many years in Talgarth, where he was highly respected. He visited patients on March 6th and died on the following day from syncope. His sudden death will be a great shock to a very large circle, by whom he will be sadly missed, not only as an exceptionally able medical man with a high sense of his professional responsibilities but as a sincere and warm-hearted friend. Large as his practice was, he yet found time for public duties unconnected with his profession. He was a good all-round sportsman, a lover and an excellent judge of horses, and in every sense a country gentleman. Although he had been in ill-health for some years before his death, yet his high sense of duty and his devotion to professional and public work led him to continue to do his utmost with unabated zeal and in his desire to benefit others he minimised his own troubles and sacrificed his own health. He leaves a widow, a daughter, and four sons, two of whom are members of the medical profession.

JOHN DAVIES JAMES, M.R.O.S. ENG., L.S.A., J.P., D.L.

Mr. J. D. James died at his residence, the Grove, Blackwood, Monmouthshire, on March 4th, in his seventy-third year. He obtained his professional training at St. Bartholomew's Hospital and became qualified as M.R.O.S. Eng. and L.S.A. in 1857. In the same year he commenced practice at Blackwood and after achieving a reputation as a skilful practitioner retired from active work in 1890. Mr. James took a great interest in all matters connected with the county of Monmouth. He was placed on the commission of the peace in 1869. In 1871 he was elected a member of the first Bedwelly school board and for 18 years served in this position. He was elected an alderman in 1903. In 1897 he became chairman of the Bedwelly division of county magistrates. He was also deputy lieutenant for the county of Monmouth. Mr. James was highly popular and was well known for his benevolence. He was a keen sportsman and was formerly one of the boldest riders with the hounds in Monmouthshire.

JOHN HUNTER, M.B., CH.B. ABERD.

Dr. John Hunter, assistant to Dr. L. B. Beddie, Fraserburgh, died on the forenoon of March 6th at the residence of the latter in Saltoun-place, Fraserburgh, death being due to acute pneumonia, resulting from a severe chill contracted about a week previously. The deceased, who was only 24 years of age, was a son of Mr. Stephen Hunter, manager of the Northern Agricultural Company, Aberdeen. He graduated at the University of Aberdeen two years ago, and after serving for a period in the Aberdeen Royal Infirmary he went to assist Dr. Beddie in November last. Dr. Hunter, though a young man, soon gained the confidence of the patients, while in a social capacity he was also well known in the district.

HEALTH OF TORQUAY.—Dr. T. Dunlop, the medical officer of health of Torquay, in his annual report for 1905, states that the birth-rate was 15.4 per 1000, against 15.7 in 1904. The death-rate was 13.9 per 1000, exactly the same as the previous year. The infantile mortality was 95 per 1000, compared with 120 per 1000 in 1904. Dr. Dunlop states that Torquay enjoys an excess of sunshine during the winter months over most health resorts and the other special features of the climate are equability of temperature and dryness of the air.

Medical News.

UNIVERSITY OF LONDON.—At the intermediate examination in medicine held in January the following candidates were successful:—

Bileen Elizabeth Allen, London (Royal Free Hospital) School of Medicine for Women; Malcolm Edward Ball, Guy's Hospital; Frederick Michael Bishop, St. Bartholomew's Hospital; Herbert Orpe Brookhouse,† Guy's Hospital; John Philip Buckley,† University of Cambridge and Victoria University; Arthur Laurence Candler,† St. Bartholomew's Hospital; Bernard Arthur Chadde, St. Thomas's Hospital; Joseph Harry Clarke, St. Mary's Hospital; Ernest Neville Cook, University College; Ethel Constance Cousins,† London (Royal Free Hospital) School of Medicine for Women; Lawrence Croft, Guy's Hospital; Aston Ridley Dale, King's College and Westminster Hospital; Arthur Davies, Westminster Hospital; Trevor Berwyn Davies, University College, Cardiff; Newton Charles Davis, St. Bartholomew's Hospital; Canut Deuntzer, Middlesex Hospital; Ethel Adelaide Douglas, London (Royal Free Hospital) School of Medicine for Women; Evan Parry Evans, University College, Cardiff, and London Hospital; Thomas Evans, Guy's Hospital; William Vincent Field, London Hospital; Josephine E. L. Griffiths and Ethel Margaret Eades Hall, London (Royal Free Hospital) School of Medicine for Women; George Blenkhorn Harland, University of Durham; William Roberts Harris, St. George's Hospital; Frederick Whewell Hogarth, Guy's Hospital; Sidney Ernest Holder, University College; Kenneth Hill Hole and Habibulma I. Janmahomed,† Guy's Hospital; David Judah, University College; Arthur Norman Leeming, Alfred Everard Lees, and Herbert Cubitt Lucey, Guy's Hospital; Edmund Garry Mack, University College; Claude Herbert Marshall, Guy's Hospital; Edward Kenneth Martin, University College; John Birch Martin and Howard Edward Hall Mitchell, Guy's Hospital; Max H. Edward R. Montesole, St. Thomas's Hospital; Mark Alleyne Nicholson, London Hospital; Owen Brynno Parry, St. Mary's Hospital; Mary Elizabeth Parsons, London (Royal Free Hospital) School of Medicine for Women; Eustace M. Parsons-Smith, St. Thomas's Hospital; Philip Seymour Price, Guy's Hospital; Thomas Edwin Pryce, University College; Douglas Reynolds, Guy's Hospital; Rowland Waters Rix, St. Thomas's Hospital; Mabel Russell, London (Royal Free Hospital) School of Medicine for Women; Arthur Frederick Sanderson, St. Thomas's Hospital; Harold Willis Scawin, St. Bartholomew's Hospital; John Edward Seadmore and Frank Standish, London Hospital; Tom Stansfield, Guy's Hospital; Horace Elliot R. Stephens,† Victoria University; Kenneth Henry Stokes, University College; Hugh Stott, Guy's Hospital; Gravenor Robert Strong, Westminster Hospital; Geoffrey Viner, St. Bartholomew's Hospital; Dora Muriel Watney and Lillian Enid Watney, London (Royal Free Hospital) School of Medicine for Women; and Richard Tudor Williams,† St. Bartholomew's Hospital.

* Distinguished in anatomy. † Distinguished in physiology. ‡ Distinguished in pharmacology.

This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

UNIVERSITY OF CAMBRIDGE.—The late Dr. Perowne has bequeathed to the University his collection of amber from the Norfolk coast.—The Council of the Senate has proposed that the income of the fund bequeathed to the University by the late F. J. Quick shall be applied to the foundation of a Quick professorship of biology with a stipend of about £1000; to the provision of assistance and equipment for the professor's laboratory; and to the furtherance of research in animal and vegetable biology. The professor is, in the first instance, to devote himself to the study of the protozoa, especially of such as cause disease.—The Council has propounded a scheme for the mutual recognition by Cambridge of the matriculation examination of the Universities of Manchester, Liverpool, Leeds, and Sheffield, and by these Universities of the previous, senior local, and higher Oxford and Cambridge examinations.—In view of the changes in the school year favoured by the Board of Education the Local Examinations Syndicate proposes to hold its examinations in July as well as in December.—The Studies and Examinations Syndicate has issued a second report. Recognising that the Senate is not prepared to exempt all candidates from taking the two classical languages in the previous examination, it now proposes that "students in science" should be distinguished from "students in letters," and that the former should not be required to take more than one classical language in the previous or subsequent examinations for a degree. The report, which thus provides that "compulsory Greek" shall not be exacted from students proposing to graduate in such subjects as mathematics, natural science, mechanical science, and economics, is set down for discussion on April 27th and 28th.—The examination in sanitary science for the Diploma in Public Health will begin (Part I.) on April 4th and (Part II.) on April 9th.—Mr. L. A. Borradaile, M.A., is appointed an examiner in elementary biology in the place of Mr. Shipley.—At the Congregation on March 10th the following degrees were conferred:—

M.B. and B.C.—W. H. Hastings, Trinity; and C. Alerman, Gonville and Caius.

M.B. only.—C. E. A. Armittage, Emmanuel.

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THOMAS DUDDINGTON WILSON, M.A., M.B. EDIN.,
F.R.C.S. EDIN.

Dr. Duddington Wilson died at his residence at Newington, Edinburgh, on March 8th from pneumonia after an illness of about nine days. The intimation of his death was a shock to a large circle of friends in Edinburgh, for his illness was not generally known. Dr. Wilson was widely known in Edinburgh from the prominent place he took in politics. He was for years chairman of the South Edinburgh Unionist Association. His father was a well-known practitioner on the north side of the city 30 years ago. The son graduated in medicine at the University of Edinburgh in the year 1875, having already taken his degree in arts. He was out of Edinburgh for a number of years but returned in 1883 and began practice on the south side in the district of Newington. He gathered a considerable family practice

and was much liked and valued by his patients. He was kind and liberal to the poor and ever ready to give them his professional help. As a man he was straightforward, genial, sensible, and cultured and the profession in Edinburgh is the poorer by his death.

THOMAS EDWARD WILLIAMS, F.R.C.S. EDIN.,
M.R.C.S. ENG., L.S.A., J.P.

Mr. T. E. Williams died at his residence, Abernig, Targath, Breconshire, on March 7th. The deceased received a medical education at St. Bartholomew's Hospital, taking the qualifications of M.R.C.S. Eng. and L.S.A. in 1863. He was admitted a Fellow of the Royal College of Surgeons of Edinburgh in 1869. Mr. Williams had been in practice for many years in Targath, where he was highly respected. He attended patients on March 6th and died on the following day of an apoplexy. His sudden death will be a great shock to a large circle, by whom he will be sadly missed, not only as an exceptionally able medical man with a high sense of professional responsibilities but as a sincere and warm-hearted friend. Large as his practice was, he yet found time for public duties unconnected with his profession. He was a good all-round sportsman, a lover and an excellent judge of horses, and in every sense a country gentleman. Although he had been in ill-health for many years before his death, yet his high sense of duty and his devotion to professional and public work led him to continue to do his utmost with unabated zeal and in his desire to benefit others he minimised his own troubles and sacrificed his own health. He leaves a widow, a daughter, and four sons, two of whom are members of the medical profession.

JOHN DAVIES JAMES, M.R.C.S. ENG., L.S.A., J.P., D.L.

Mr. J. D. James died at his residence, the Grove, Blackwood, Monmouthshire, on March 4th, in his seventy-third year. He obtained his professional training at St. Bartholomew's Hospital and became qualified as M.R.C.S. Eng. and L.S.A. in 1857. In the same year he commenced practice at Blackwood and after achieving a reputation as a skilful practitioner retired from active work in 1890. Mr. James took a great interest in all matters connected with the county of Monmouth. He was placed on the commission of the peace in 1869. In 1871 he was elected a member of the Bedwelly school board and for 18 years served in this position. He was elected an alderman in 1903. In 1897 he became chairman of the Bedwelly division of county magistrates. He was also deputy lieutenant for the county of Monmouth. Mr. James was highly popular and was well known for his benevolence. He was a keen sportsman and was formerly one of the boldest riders with the hounds in Monmouthshire.

JOHN HUNTER, M.B., CH.B. ABERD.

Dr. John Hunter, assistant to Dr. L. B. Beddie, Fraserburgh, died on the forenoon of March 6th at the residence of the latter in Saltoun-place, Fraserburgh, death being due to pneumonia, resulting from a severe chill contracted about a week previously. The deceased, who was only 24 years of age, was a son of Mr. Stephen Hunter, manager of the Northern Agricultural Company, Aberdeen. He graduated at the University of Aberdeen two years ago, and after serving a period in the Aberdeen Royal Infirmary he went to assist Dr. Beddie in November last. Dr. Hunter, though a young man, soon gained the confidence of the patients, while in a special capacity he was also well known in the district.

HEALTH OF TORQUAY.—Dr. T. Dunlop, the medical officer of health of Torquay, in his annual report for 1905, states that the birth-rate was 15.4 per 1000, against 15.7 in 1904. The death-rate was 13.9 per 1000, exactly the same as the previous year. The infantile mortality was 95 per 1000, compared with 120 per 1000 in 1904. Dr. Dunlop states that Torquay enjoys an excess of sunshine during the winter months over most health resorts and the other special features of the climate are equability of temperature and dryness of the air.

Medical News.

UNIVERSITY OF LONDON.—At the intermediate examination in medicine held in January the following candidates were successful:—

Bileen Elizabeth Allen, London (Royal Free Hospital) School of Medicine for Women; Malcolm Edward Ball, Guy's Hospital; Frederick Michael Bishop, St. Bartholomew's Hospital; Herbert Orpe Brookhouse, Guy's Hospital; John Philip Buckley, University of Cambridge and Victoria University; Arthur Laurence Candier, St. Bartholomew's Hospital; Bernard Arthur Cheadle, St. Thomas's Hospital; Joseph Harry Clarke, St. Mary's Hospital; Ernest Neville Cook, University College; Ethel Constance Cousins, London (Royal Free Hospital) School of Medicine for Women; Lawrence Croft, Guy's Hospital; Aston Ridley Dale, King's College and Westminster Hospital; Arthur Davies, Westminster Hospital; Trevor Berwyn Davies, University College, Cardiff; Newton Charles Davis, St. Bartholomew's Hospital; Canut Deuntzer, Middlesex Hospital; Ethel Adelaide Douglas, London (Royal Free Hospital) School of Medicine for Women; Evan Parry Evans, University College, Cardiff, and London Hospital; Thomas Evans, Guy's Hospital; William Vincent Field, London Hospital; Josephine E. L. Griffiths and Ethel Margaret Eades Hall, London (Royal Free Hospital) School of Medicine for Women; George Blenkhorn Harland, University of Durham; William Roberts Harris, St. George's Hospital; Frederick Whewell Hogarth, Guy's Hospital; Sidney Ernest Holder, University College; Kenneth Hill Hole and Habibulla I. Jannamohamed, Guy's Hospital; David Judah, University College; Arthur Norman Leeming, Alfred Everard Lees, and Herbert Cubitt Lacey, Guy's Hospital; Edmund Garvin Mack, University College; Claude Herbert Marshall, Guy's Hospital; Edward Kenneth Martin, University College; John Birch Martin and Howard Edward Hall Mitchell, Guy's Hospital; Max H. Edward R. Montesole, St. Thomas's Hospital; Mark Alleyne Nicholson, London Hospital; Owen Brynogy Parry, St. Mary's Hospital; Mary Elizabeth Parsons, London (Royal Free Hospital) School of Medicine for Women; Eustace M. Parsons-Smith, St. Thomas's Hospital; Philip Seymour Price, Guy's Hospital; Thomas Edwin Pryce, University College; Douglas Reynolds, Guy's Hospital; Rowland Waters Rix, St. Thomas's Hospital; Mabel Russell, London (Royal Free Hospital) School of Medicine for Women; Arthur Frederick Sanderson, St. Thomas's Hospital; Harold Willis Scavin, St. Bartholomew's Hospital; John Edward Scudamore and Frank Standish, London Hospital; Tom Stansfield, Guy's Hospital; Horace Elliot R. Stephens, Victoria University; Kenneth Henry Stokes, University College; Hugh Stott, Guy's Hospital; Gravenor Robert Strong, Westminster Hospital; Geoffrey Viner, St. Bartholomew's Hospital; Dora Muriel Watney and Lillian Enid Watney, London (Royal Free Hospital) School of Medicine for Women; and Richard Tudor Williams, St. Bartholomew's Hospital.

* Distinguished in anatomy. † Distinguished in physiology. ‡ Distinguished in pharmacology.

This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

UNIVERSITY OF CAMBRIDGE.—The late Dr. Perowne has bequeathed to the University his collection of amber from the Norfolk coast.—The Council of the Senate has proposed that the income of the fund bequeathed to the University by the late F. J. Quick shall be applied to the foundation of a Quick professorship of biology with a stipend of about £1000; to the provision of assistance and equipment for the professor's laboratory; and to the furtherance of research in animal and vegetable biology. The professor is, in the first instance, to devote himself to the study of the protozoa, especially of such as cause disease.—The Council has propounded a scheme for the mutual recognition by Cambridge of the matriculation examination of the Universities of Manchester, Liverpool, Leeds, and Sheffield, and by these Universities of the previous, senior local, and higher Oxford and Cambridge examinations.—In view of the changes in the school year favoured by the Board of Education the Local Examinations Syndicate proposes to hold its examinations in July as well as in December.—The Studies and Examinations Syndicate has issued a second report. Recognising that the Senate is not prepared to exempt all candidates from taking the two classical languages in the previous examination, it now proposes that "students in science" should be distinguished from "students in letters," and that the former should not be required to take more than one classical language in the previous or subsequent examinations for a degree. The report, which thus provides that "compulsory Greek" shall not be exacted from students proposing to graduate in such subjects as mathematics, natural science, mechanical science, and economics, is set down for discussion on April 27th and 28th.—The examination in sanitary science for the Diploma in Public Health will begin (Part I.) on April 4th and (Part II.) on April 9th.—Mr. L. A. Borradaile, M.A., is appointed an examiner in elementary biology in the place of Mr. Shipley.—At the Congregation on March 10th the following degrees were conferred:—

M.B. and D.C.—W. H. Hastings, Trinity; and C. Akerman, Gonville and Caius.
M.B. only.—C. E. A. Armitage, Emmanuel.

FOREIGN UNIVERSITY INTELLIGENCE.—*Kiess*: Dr. Lominsky, *privat docent* of Histology and Embryology, has been appointed Extraordinary Professor.—*Konigsberg*: Dr. Heine of Berlin has been offered an Extraordinary Professorship of Otolaryngology with charge of the Ear Polyclinic.—*Lemberg*: Dr. Kasimir Panek has been recognised as *privat-docent* of Hygiene and Dr. Georg Leopold Modrakowski as *privat-docent* of Pharmacognosia.—*Lyons*: The chair of External Pathology has been abolished and a chair of Clinical Gynaecology has been established to which Dr. Pollosson has been appointed.—*Munich*: Dr. Melnhard Pfandner of Gratz has been appointed Extraordinary Professor of Children's Diseases in place of Dr. von Rinke, resigned.—*Nancy*: The chair of Pathological Anatomy has been abolished and a chair of Paediatrics established, to which Dr. Haushalter has been appointed.—*Naples*: Dr. Guido Guerrini has been recognised as *privat docent* of General Pathology.—*Odessa*: Dr. Martin Sihle has been recognised as *privat-docent* of Medicine and Therapeutics.—*Padua*: Dr. Ernesto Belmondo, Extraordinary Professor of Psychiatry, has been promoted to the Ordinary Professorship.—*Paris*: Dr. Giulio Luigi Sacconaghi has been recognised as *privat-docent* of Internal Pathology.—*Pisa*: Dr. Antonio Cesaris-Demel has been promoted to the Ordinary Professorship of Pathological Anatomy.—*Rome*: Dr. Cesare Micheli and Dr. Francesco Mirto have been recognised as *privat-docenten* of Midwifery and Gynaecology.—*Würzburg*: Dr. Straub of Marburg has been appointed to the chair of Pharmacology in place of the late Dr. Kunkel.—*Zürich*: Dr. Silbeschmidt, *privat-docent* of Bacteriology, has been promoted to an Extraordinary Professorship.

LEICESTER AND MILK DEPÔTS.—A conference was held in the town hall, Leicester, on March 1st, between the sanitary committee of the corporation and the medical men of the town to discuss the advisability of establishing a milk depôt for children in the town. Alderman Windley, chairman of the sanitary committee, presided and there was a good attendance. The chairman said that fortunately Leicester was not in a worse condition as regards the death-rate among infants than the majority of the large towns of the country. It had been as high as 210 per 1000 births, but in 1904 it was 161 and last year 146·5 per 1000. Councillor J. T. Biggs said that he had accompanied the chairman on a deputation which visited several towns which had established milk depôts and he felt convinced that a considerable amount of good was effected by the system. Dr. C. K. Millard (medical officer of health of the borough) said that it was a fact that an increasing proportion of mothers in large towns were unable to secrete milk sufficient to suckle their infants and they were driven, therefore, to consider in what way the feeding of infants could be improved. The results from milk depôts had been eminently satisfactory and the idea as to the risk of scurvy was, he thought, pretty much of a bogey. A number of those present took part in the discussion, all being in favour of the suggestion. No formal proposition was, however, put to the meeting.

THE OFFICIAL ORGAN OF THE AMERICAN NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.—The *Journal of the Outdoor Life*, which is published at the Adirondack Cottage Sanatorium, Saranac Lake, New York, and which has just entered upon its third year, has been made the official organ of the National Association for the Study and Prevention of Tuberculosis in America. The *Journal of the Outdoor Life* deals with the outdoor treatment of tuberculosis in an intelligent and scientific manner. It does not advocate self-treatment by the laity or attempt to supplant personal medical advice. It aims to point out the more common pitfalls that beset the unwary health-seeker and to awaken in its readers a healthful interest in an outdoor life. It advocates competent medical supervision, fresh air, nourishing food, and carefully regulated exercise.

UNIVERSITY OF OXFORD.—The hebdomadal council has appointed William Osler, D.M., Hon. D.Sc., F.R.S., student of Christ Church, Regius Professor of Medicine, representative of the University on the council of the Lister Institute of Preventive Medicine in the place of the late Sir John Burdon Sanderson, Bart., D.M., F.R.S., Honorary Fellow of Magdalen College. Professor Osler has also been appointed by the hebdomadal council a member of

the committee for appointment of honorary medical officer of the Radcliffe Infirmary, in the place of the late Sir John Burdon Sanderson.

WEST LONDON HOSPITAL.—The board of the hospital has appointed Mr. Leonard A. Bidwell, F.R.C.S., in recognition of his 15 years' work in the out-patient department, full surgeon without waiting for a vacancy.

ENTERIC FEVER ON THE "CORNWALL."—The medical officer of the Port of London has reported a small epidemic of enteric fever on board the training-ship *Cornwall*, moored off Purfleet, and used for the reception of boys from reformatory schools.

FREEMASONRY.—*The Rahere Lodge*—We are asked to state that it is proposed to form an R.A. Chapter in connexion with the Rahere Lodge, to be open to all St. Bartholomew's Hospital men who are Freemasons, whether they be members of the Rahere Lodge or not. Further particulars can be obtained on application to W. M. 15, Wimpole-street, London, W. The first founders' meeting is fixed for Tuesday, March 27th, at 5.30 P.M., at the above address but the names of those wishing to become founders could be received for two or three weeks later.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Government and Poisons and Pharmacy.

In the course of the last few years statements have been repeatedly made to the effect that a Government Bill dealing with poisons and pharmacy was about to be introduced and some 12 months ago it was definitely announced by Mr. BALFOUR that the Bill had been actually drafted. The exigencies of politics must have made it necessary to give precedence to other matters, but apparently the draft has now been discovered in a pigeon-hole by the new President of the Council, the Earl of CREWE, for this week he has presented the Bill in the House of Lords. It is described simply as the Poisons and Pharmacy Bill. The second reading has been put down for Tuesday, March 20th. From the text of the Bill, which has now been printed, and an official memorandum, it appears that Clause 1 carries into effect the recommendations of the Departmental Committee on the sale of poisonous substances as to what substances should be treated as poisons. It does little more than substitute for the schedule of poisons contained in the Act of 1868 that schedule as amended by Orders in Council made under Section 2 of that Act. The object of Clause 2 is to authorise persons (who are not chemists), if licensed for the purpose by the local authority, to sell sheep dips, weed-killers, and other poisonous substances for use in connexion with agriculture and horticulture. The Departmental Committee made a recommendation to this effect. Clause 3 requires that where a chemist's business is carried on in two or three shops the business shall be conducted by a duly qualified manager in every shop where the chemist does not himself superintend the business. Clause 4 reverses the decision of the court in "The Pharmaceutical Society v. The London and Provincial Supply Association" (5 App. Cas. 857). In that case it was decided that the provisions contained in the Act of 1868, prohibiting persons not being qualified chemists from selling poisons, were not applicable to companies. Clause 5 somewhat extends the by-law making power of the Pharmaceutical Society and Clause 6 places restrictions on the sale of sulphuric acid, nitric acid, hydrochloric acid, soluble salts of oxalic acid, and similar poisons without, however, limiting the class of persons by whom such poisons may be sold.

The Disposal of Sewage.

The Royal Commission on Sewage Disposal has reported to Parliament that the systematic investigation of a number of artificial means of purifying sewage for the purpose of ascertaining their relative value in different circumstances is still in progress. It is hoped to issue a report on this subject within the next six months. The Commission has not been appointed for any definite time and it is impossible to state when it will be in a position to make a final report.

Tuberculosis.

The work of the Royal Commission on Tuberculosis is to be continued for another year and a slightly decreased vote—£2400 instead of £2540—is about to be asked from the House of Commons. The reference to the Commission is "to inquire with respect to tuberculosis whether the disease in animals and man is the same, whether animals and man can be reciprocally infected with it, and under what conditions, if at all, the transmission of the disease from animals to man takes place."

The Care and Control of the Feeble-minded.

The following is an extract from a letter from the secretary of the Royal Commission on the Care and Control of the Feeble-minded

which has been circulated together with the estimates for the next financial year. "This Commission was appointed by Royal Warrant, dated 24th Feb. 1904. Up to the end of 1905 33 meetings were held and 130 cases examined. Some of the Commissioners have visited America, Scotland, and Belgium, and various institutions in this country. Medical inspections by specially appointed medical men are being undertaken in various unions in England and Wales which are expected to be completed by the end of March, 1906. The Commissioners propose to visit Scotland and Ireland for the purpose of hearing further evidence of inspecting various institutions, and some of the Commissioners propose to pay a further visit to certain institutions on the continent. The work of the Commission is proceeding as rapidly as possible but it is hardly probable that its labours will be entirely completed before the end of March, 1907." The vote asked for on this occasion is £436, which is £157 more than the vote for the year which ends with this year.

Private Members and Pharmacy.

Of course, the introduction of a Government Bill dealing with poisons and pharmacy will interfere with the prospects of the *Drugs and Poisons Bill* on the subject, Mr. WINFRET and his associates are in opposition in the meantime, at any rate, to remove their names from the order paper of the House of Commons. This week they have circulated the text of their proposals along with a memorandum in which they explain their objects to be—

(a) To check the practice of opening and carrying on divers shops for the sale of poisons and to afford adequate protection to persons requiring the same by providing that every such shop shall be under the personal conduct and supervision of a duly qualified person; (b) to put an end to the abuses at present attending the sale of poisons and to better regulate the sale of the same by providing that no poison shall be sold except in a shop which shall first be duly registered; (c) to provide for the maintenance of a system of shops where poisons may be sold and also a register of the duly qualified chemists *bona fide* conducting each such shop and to enable the registrar from time to time to make inspections in, and additions to, the same; (d) to provide for the compounding of prescriptions shall be in the hands of persons only qualified to sell "poisons"; (e) to require proprietors keeping open shops for the sale of poisons shall be persons of their business managed by a duly qualified person; (f) to extend to corporate bodies certain of the provisions of the Pharmacy Acts, 1852 and 1858, from which they are exempted by reason of the decision of the House of Lords in the case of the Pharmaceutical Society v. The London and Provincial Dispensaries, Limited, Law Reports, 1890, Appeal Cases, 557; (g) to facilitate the examination of persons desiring to qualify as chemists and druggists, and to enable the Pharmaceutical Society to grant certificates of kindred bodies in lieu of examination.

Juvenile Smoking.

Dr. MACDONALD has now introduced his Bill to provide for the restriction of juvenile smoking.

Select Committee on the Butler Trade.

A Select Committee has been appointed by the Government on the subject.

Scottish Medical Officers and the Local Government Board.

On Tuesday 20 medical officers in Scotland petitioned the House of Commons through Mr. CARRACHER WATSON in favour of an amendment of the Local Government (Scotland) Act which would allow of an appeal to the Local Government Board in the case of dismissal.

HOUSE OF COMMONS.

THURSDAY, MARCH 8TH.

Sanitary Condition of the Jews.

Mr. WEBB asked the Secretary for Scotland whether he was aware that the local authorities in the island of Lewis were unable to give effect to the provisions of the Public Health (Scotland) Act or take such steps as might be necessary to remedy the insanitary state of the townships, as disclosed in the report to the Local Government Board for Scotland on the sanitary condition of the Jews by the Sanitary Medical Inspector, Dr. F. Dittmar; and whether the Local Government Board for Scotland had yet considered the desirability of doing over the public health administration of the island.—Mr. WEBB replied: I am aware of the facts. No decision has been arrived at but the matter is under the anxious consideration of the Local Government Board and myself.

Vaccination Protection.

Mr. T. F. RICHARDS asked the Secretary of State for the Home Department whether his attention had been called to the case of Mr. Joseph Sack of Haringey, who was summoned before the Highgate Magistrate on three separate occasions for refusing to have his children vaccinated, he declaring on each occasion that he held conscientious objections to vaccination; and whether he would take action with the authorities to give that relief to conscientious objectors which the Act contemplates and put a stop to repeated prosecutions.—Mr. RICHARDS answered: My attention has not been called to the case registered by the honourable Member. In 1904 a circular was sent to all magistrates drawing attention to remarks made by the Lord Chief Justice in the proper interpretation of the section, but as the law officers have no power to interfere with the discretion given to the magistrates in the matter of certificates of conscientious objection nor with repeated prosecutions.

MONDAY, MARCH 12TH.

Irish Medical Contracts.

Mr. KENNEDY asked the Chief Secretary for Ireland whether he was aware that the Local Government Board was seeking to compel all the medical officers in Ireland to advertise for contracts for medicines and

medical and surgical appliances on March 10th, and in cases where the lowest tender was not accepted the Board now required to be supplied with the reason for non-acceptance; and whether this action had his sanction and on what account it was taken.—Mr. BRYCE answered: The Local Government Board has fixed March 10th as the latest day on which tenders for medicine contracts can be lodged throughout Ireland, because if a uniform date were not fixed some firms might withhold their tenders until they had ascertained the terms upon which rival firms were tendering in other unions and this would obviously not be in the interests of the ratepayers. The principle embodied in the Board's regulations requiring guardians to state the reasons for non-acceptance of the lowest tender, when they take such a course, is the same as that which has received the sanction of Parliament in Section 18 of the Local Government (Ireland) Act, 1902.

Mr. CHARLES DEVLIN asked the Chief Secretary for Ireland whether he was aware that the Local Government Board had written to the Galway board of guardians remonstrating with it because in the matter of medicine contracts the board of guardians thought well only to consider tenders from Irish firms; and whether it was the intention of the Local Government Board to throw obstacles in the way of Irish boards of guardians encouraging Irish manufactures.—Mr. BRYCE answered: The Local Government Board, having become aware that certain boards of guardians had adopted resolutions that medicine contracts should be confined to Irish firms, has recently addressed a circular letter to all boards of guardians in Ireland, pointing out how very detrimental such a restriction would be to the interests of the ratepayers, for whom the guardians act as trustees, and possibly to Irish industry, by provoking action in England unfavourable to Irish tenders for other articles. The circular also pointed out that it is the duty of the Local Government Board to see that no unnecessary charge is placed upon public funds, from which one-half of the expenditure upon medicine contracts is defrayed. It is not, however, the intention of the Local Government Board to place obstacles in the way of the encouragement of Irish manufactures by boards of guardians, so long as they do not neglect the paramount interests of the ratepayers. I may add that the quantity of medicinal drugs actually manufactured in Ireland appears to be small and that a restriction of contracts to Irish firms would not necessarily tend to encourage the industry. Out of nine Irish firms which hold medicine contracts only two are manufacturing druggists; and even these obtain many of their drugs from England.

Experiments on Dogs.

Mr. GEORGE GREENWOOD asked the Secretary of State for the Home Department whether his attention had been drawn to the return showing the number of experiments performed on living animals during the year 1894, under licences granted under the Act 33 and 49 Vic., c. 77, distinguishing painless from painful experiments; whether the 16 experiments performed by Dr. William Bain and recorded in the return, in some of which septic bacilli were introduced into the interior of the gall-bladders of dogs through wounds two or three inches long, made for that purpose, and in all of which one or more gall-stones were also inserted into the living dogs' gall bladders and left there for periods varying from 14 to 70 days, and in 13 of which a post-mortem examination proved that the gall-bladders were inflamed at the time of death, should not properly have been distinguished as painful; and whether the operations described by Dr. Bain as involving the insertion of septic bacilli into wounds in dogs made by himself for that purpose were properly reported in such return as aseptic operations.—Mr. GLADSTONE replied: The answer to the first part of the honourable Member's question is in the affirmative. I am advised that the answer to the second part is that the experiments could not properly be described as painful. These of the animals which the Inspector saw gave no indications of pain and the operator declared that he did not believe that the animals suffered any pain. The symptoms observed in a post-mortem examination did not indicate suffering. As to the third part of the question, I am advised that as the actual operation was performed under aseptic conditions it is properly described as aseptic.

Sale of Quack Medicines.

Mr. MITER asked the Secretary of State for the Home Department whether his attention had been directed to the frauds perpetrated upon the public by the advertising and sale of quack medicines and the consequent loss of money sustained by the public and frequent postponement of proper remedial measures being taken by the sufferers in specific diseases, and whether the Government would take any, and if any what, steps either by the institution of prosecutions for fraud or obtaining money by false pretences or by direct prohibitive legislation to deal with this matter.—Mr. GLADSTONE replied: I do not doubt that the advertisement and sale of quack medicines are often the cause of serious mischief, but it is an evil which must be met rather by the spread of education than by legislation or prosecution. The difficulties of proving fraud in such cases are, I fear, almost insuperable. If the honourable Member will refer to the proceedings in the Harries' pills case in 1884 he will understand some of the difficulties I refer to.

TUESDAY, MARCH 13TH.

The Whisky Controversy.

Mr. KILBRIDE asked the Chancellor of the Exchequer whether his attention had been drawn to the convictions against traders in North London for selling patent spirit as whisky, and what action he proposed to take to prevent the repetition of such sales; whether he would in future allow operations to be carried on in Government warehouses in which patent spirit was bottled in bond, described as fine old Scotch whisky, and exported to our colonies.—Mr. MCKENNA, who answered for Mr. Asquith, said: My attention has been called to the convictions. The Excise Duty Acts do not discriminate between pot still and patent still spirits and as the duty upon both is the same the Inland Revenue officials, whose functions are confined to the protection of the revenue, have no authority to concern themselves in the matter. I understand that notice of appeal against the decision of the magistrate has been given, so that in any case the matter is still *sub judice*.

The Practice of Vintication.

Mr. SOAMES asked the Secretary of State for the Home Department whether in view of the uneasiness prevailing in the public mind on the practice of vintication he would advise the Government to grant a Royal Commission to inquire into the whole system.—Mr. GLADSTONE

replied: The present law was based on the report of the Royal Commission of 1876. Since then there have been great changes in medicine and the methods of scientific research. I assent to the view that it is desirable that an inquiry should be held and I will consider what form the inquiry should take.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

- ATKINS, F. DURNFORD, M.B., B.S. Durh., has been appointed Junior House Surgeon at the Croydon General Hospital.
- BLAIRSON, ARTHUR ALEXANDER, M.R.C.S., L.S.A., has been appointed Medical Officer of Health of Glastonbury (Somerset) for three years.
- BRISCOE, WILLIAM THOMAS, M.D., M.Ch. Dub., has been re-appointed Medical Officer of Health of Chippenham (Wiltshire).
- BROWN, R. B., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Howden District of the county of York.
- BRUKWIN, ALAN DEED, M.B., B.O. Cantab., has been appointed House Surgeon at the Donbighshire Infirmary, Donbigh.
- DALBY, AUGUSTUS WILLIAM, L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of Health for the Frome (Somerset) Rural District Council.
- DEARDEN, W. F., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H., has been appointed to the office of Medical Officer of Health to the Manchester Port Sanitary Authority.
- EDMUNDS, EDGAR F., M.B., B.S. Durh., has been appointed House Surgeon at the Chester General Infirmary.
- FAIRBANK, H. A. T., M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Sick Children, Great Ormond-street.
- FALCONER, FRANCIS W., M.B., Ch.B. Aberd., L.M. Rot. Hos. Dub., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Infirmary.
- FLITTOFT, THOMAS E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Newcastle-on-Tyne Dispensary.
- FOREMAN, BERRY JOSEPH, L.R.C.P. & S. Edin., has been appointed House Surgeon at the Rawcliffe Hospital and Dispensary, Chorley, Lancs.
- LACE, FREDERICK, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed an Honorary Consulting Surgeon to the Chippenham Cottage Hospital.
- LEES, HAROLD C., M.B., B.S. Lond., has been appointed Senior House Surgeon at the Blackburn and East Lancashire Infirmary.
- MUNRO, W. E., M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Burghhead District of the county of Bgh.
- POTTINGER, J. A., M.B., B.Ch. Edin., has been appointed Senior Resident Medical Officer at the Provincial Hospital, Port Elizabeth, South Africa.
- PRICE, D., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Castle Cary District of the county of Somerset.
- RANDOLPH, CHARLES, M.R.C.S. Eng., L.R.C.P. & L.M. Edin., has been appointed Medical Officer of Health for the Wellington (Somerset) Rural District.
- RUTHERFORD, HENRY, M.B., C.M., F.F.P.S. Glasg., has been appointed Surgeon to the Glasgow Royal Infirmary.
- SAWYER, JAMES E. H., M.D. Oxon., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Birmingham and Midland Free Hospital for Sick Children.
- STEPHENS, F. N., M.D. Toronto, has been appointed Clinical Assistant to the Chelsea Hospital for Women.
- STOLTERFOOTH, C. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stokenchurch District of the county of Buckingham.
- TERRY, HENRY GEORGE, F.R.C.S. Edin., M.R.C.S., L.S.A., has been appointed an Honorary Consulting Surgeon to the Chippenham Cottage Hospital.
- WALLER, ALFRED WHALLEY, L.R.C.P. Lond., M.R.C.S., D.P.H. Cantab., has been appointed Honorary Surgeon to the Stroud (Gloucestershire) General Hospital.
- WALLIS, E. WHISHAW, L.D.S. R.C.S. Eng., has been appointed Assistant Dental Surgeon to the Italian Hospital, Queen-square, London.
- WATKINS, WILLIAM RICHARD SPENCER, M.B., Ch.B. Edin., has been appointed House Surgeon at the Cardiff Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

- BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and washing.
- BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.
- BRISTOL BRISTOLINGTON HOUSE PRIVATE ASYLUM.—Assistant Medical Officer, unmarried. Salary £160.
- BRISTOL GENERAL HOSPITAL.—Assistant House Physician. Salary £80, with board, residence, &c.
- OKWOOD, NEAR WORKING, SURREY COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £120, rising to £150, with board, lodging, laundry, and attendance.

- BURLEY-IN-WHAERFALL, WEST RIDING COUNTY COUNCIL, Scales Park.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.
- BURY INFIRMARY.—Junior House Surgeon. Salary £80, increasing to £90, with board, residence, and attendance.
- CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £30 per annum, with board, residence, and washing.
- CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board lodging, and washing.
- DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.
- EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the Casualty Department for 12 months, renewable. Salary at rate of £100 per annum.
- EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Qualified Clinical Assistants.
- FARRINGTON GENERAL DISPENSARY AND LIVING-IN CHURCH, 17, Baitlett's-buildings, Holborn, E.C.—Honorary Dental Surgeon.
- GERMAN HOSPITAL, Dalston, N.E.—Honorary Anaesthetist.
- GLASGOW ROYAL HOSPITAL FOR SICK CHILDREN.—Resident House Surgeon. Salary at rate of £50 per annum, with board and laundry. Also Assistant at Dispensary for six months. Salary a rate of £100 per annum.
- GREAT NORTHERN CENTRAL HOSPITAL.—Senior House Physician, Senior House Surgeon, Junior House Physician, and Two Junior House Surgeons, all for six months. Salary of senior officers at rate of £60 per annum, and of junior officers £30 per annum, with board, lodging, and washing.
- HAMPSHIRE GENERAL HOSPITAL.—Resident Medical Officer for six months, renewable. Salary £80 per annum, with board and residence.
- HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer. Salary at rate of £50 a year, with board and washing.
- HULL ROYAL INFIRMARY.—House Surgeon, unmarried. Salary 100 guineas per annum, with board and apartments.
- ITALIAN HOSPITAL.—Honorary Assistant Surgeon.
- KING'S COLLEGE (UNIVERSITY OF LONDON).—Sambrooke Medical Registrar.
- KING'S LYNN, WEST NORFOLK AND LYNN HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.
- LONDON COUNTY ASYLUM, Colney Hatch, New Southgate, N.—Fourth Assistant Medical Officer. Salary £180 per annum, with board, apartments, and washing.
- LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Honorarium at rate of £50 per annum.
- MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer. Also Resident Medical Officer at the Convalescent Hospital, Cheshire. Salary in each case £150 per annum, with board and residence.
- MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Cavendish-square, W.—Surgeon.
- METROPOLITAN BOROUGH OF BATTERSEA.—Appointment of Medical Officer of Health. Salary £500 per annum.
- MIDDLESBROUGH, NORTH ORMSBY HOSPITAL.—House Surgeon. Salary £120, with apartments and board.
- NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Assistant Surgeon.
- NOTTINGHAM, CHILDREN'S HOSPITAL.—House Surgeon, unmarried, for six months. Board, residence, and washing provided.
- QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.
- QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—Junior House Surgeon for six months. Salary £40, with board, washing, and residence.
- ROYAL BERKSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.
- STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartall.—Senior House Surgeon. Salary £100 per annum, with apartments, board, and washing.
- TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.
- TAUNTON ISOLATION HOSPITAL.—Medical Attendant. Salary £120 per annum.
- VALKENBERG ASYLUM, near Cape Town.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, washing, and lodging.

Births, Marriages, and Deaths.

BIRTHS.

- BADCOCK.—On March 11th, at West Hill, Wandsworth, the wife of Ernest Reginald Badcock, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.
- HOWELL.—On March 12th, at Queen Anne-street, Cavendish-square, W., the wife of Conrad M. Hinds Howell, M.B., M.R.C.P., of a son.
- HUGO.—On March 11th, at Woodcote Lodge, Purley, Surrey, the wife of R. M. Hugo, M.D., F.R.C.S.I., of a son.
- WOOD.—On March 8th, at Glendore, Turner's Hill, Cheshunt, Herts., the wife of Frank H. Wood, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

- POWELL.—On March 8th, at Bombay, James Herbert Powell, L.R.C.P. & S. Edin., of pneumonia, in his 32nd year.
- WILLIAMS.—On March 7th, at Abernethy House, Telgarth, R.S.O., Thomas Edward Williams, F.R.C.S.E., J.P., in his 65th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

layers are afterwards worked between rollers and strongly pressed for more than 24 hours. In a long article on the production of celluloid and similar substances the *Scientific American* of Feb. 17th gives some particulars of various French, German, and Italian modifications of the original constituents by the addition of resins, formol-albumin, casein, or glue. It is said that gum arabic and of a mixture of camphorated nitro-cellulose for the preparation of fish-glue is non-inflammable and may be used for cinematographs. The films employed in photographic came for celluloid suitable. It is also said that a non-inflammable subcellulose for some purposes may be made with it.

STROPHANTHUS Limited, of Queen Victoria Messrs. Oppenheimer, Son, and they have been favoured by the street, London, E.C., announce, with the exclusive handling of African Lakes Corporation, for the direction of botanists, so that the *Strophanthus Kombe* identity. This is a step of considerable importance, as the collection of the seeds has reached the market article. It is very desirable far as possible. **TREATMENT OF GRAVES'S DISEASE.**

To the Editors of THE LANCET.

THE following your readers inform me where I can find accounts of treatment of Graves's disease? also where to obtain the same.

SIRS,—1906.

I am, Sirs, yours faithfully, F. G. W. Your correspondent is referred to a lecture in THE LANCET of March 10, 1905, by Dr. G. R. Murray. In THE LANCET of Feb. 10th, 1906, at p. 378, will be found also a summary of a paper on the subject read before the Therapeutical Society by Dr. G. Newton Ed. L.

FACI-MUCOUS COLITIS AND THE BACILLUS ACIDI LACTICI.

To the Editors of THE LANCET.

SIRS,—Can any of your readers kindly inform me where I can obtain any information in books, or British or foreign medical journals, re the treatment of mucous colitis, intestinal putrefaction, &c., by means of lactic acid bacilli administered by the mouth, as advocated by Metchnikoff? Thanking you in anticipation,

I am, Sirs, yours faithfully,

STUDNEY WHITAKER.

Crosby-road North, Waterloo, Liverpool, March 10th, 1906.

DONTS: FOR MOTHERS AND NURSES.

UNDER the above heading we have received a set of six picture postcards published by Messrs. Reynolds and Branson of Leeds. They illustrate in a humorous way methods of treatment of infants which should most certainly be avoided with reference to perambulators, feeding, carelessness in bathing, and the like. They are sold in sets of six at the price of 6d., and they might usefully be distributed by district visitors and others.

THE ADMINISTRATION OF ANÆSTHETICS FOR UNQUALIFIED DENTISTS.

To the Editors of THE LANCET.

SIRS,—Referring to your answer to "D.P.H." re the giving of anæsthetics by medical men for unqualified dentists in your issue of March 3rd, I should like to draw his attention to the following extract from a circular issued by the Medical Council: "Any registered medical practitioner who knowingly and wilfully assists a person who is not registered as a dentist, in performing any operation in dental surgery, either by administering anæsthetics or otherwise, will be liable on proof of the facts to be dealt with by the General Medical Council as having been guilty of infamous conduct in a professional respect."

I am, Sirs, yours faithfully,

Taunton, March 14th, 1906.

ALFRED KENDRICK.

ADIPOSIS DOLOROSA (DERCUM'S DISEASE).

To the Editors of THE LANCET.

SIRS,—I want references to the literature of the above subject. Can any of your readers kindly help me to attain my object? Thanking you and them in advance, I am, Sirs, yours faithfully,

March 13th, 1906.

I. S. M.

L. E.—1. A qualified dentist should not be the servant to a company such as our correspondent describes and the General Medical Council would probably take a very serious view of his conduct if information were laid before it. 2. This is a disputed point but wherever this can be done removal from the official register leads to removal from the roll of diplomates. In the latter case, of course, the now unqualified practitioner cannot use a diploma which he has lost. 3. We do not approve of such private institutions being called "hospitals" or "dispensaries," but we doubt whether the General Medical Council would consider the action of the practitioner "an infamous one in a professional respect."

Artel.—We do not know of any case in which tetanus antitoxin has been accused of causing the disease. The dedicated serum is, we believe, dried in vacuo without heat, so that it is not sterilised and there-

fore it might contain living bacilli if it came from a horse suffering from tetanus. But as the antitoxin has almost certainly some prophylactic effect, it would be unlikely that tetanus would develop unless the dose of bacilli were very large. The antitoxin is, of course, prepared by injecting filtered cultures, not bacilli, so there is no reason for any special risk.

F. H.—We sympathise, but because some people have done wrong in one district we must not condone similar wrongdoing by other people in another district. We could not publish our correspondent's former letter as such statements should be over the signature of their author.

Perplexed.—We think that our correspondent did right to withdraw his name. The method of securing publicity is not a proper one and it is regrettable that his colleagues have not pursued the same course.

Pecunia.—We regret to say that our correspondent received the legal fee.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopedic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (19th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.)—8 P.M. Cantor Lecture.—Prof. V. B. Lewes: *Fire, Fire Risks, and Fire Extinction.* (Lecture II.)

TUESDAY (20th).—PATHOLOGICAL SOCIETY OF LONDON (Royal Army Medical College, Examination Hall, Victoria Embankment, W.C.)—5 P.M. Papers.—Lieut.-Col. C. Birt, R.A.M.C.: *Dysentery in South Africa.*—Captain W. S. Harrison, R.A.M.C.: *On the Phagocytosis of Bacillus Typhosus.*—Lieut.-Col. W. B. Leithman, R.A.M.C.: (1) A Simplified Method of Enumerating Leucocytes; (2) Demonstration of the Shedding of Membranes of Spirochaeta.

CHESAIRE CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, K.L.P.)—8 P.M.—8.30 P.M. Annual Clinical Debate: *Serum Therapy.* Dr. F. F. Clegg, Dr. H. Abrahams, and Dr. A. MacLachlan will take part in the discussion.

WEDNESDAY (21st).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.)—8 P.M. Papers.—Mr. C. F. Bouvier: *A Contribution to our Knowledge of the Rotifers of South Africa.*—Mr. H. M. Nelson: *On the Resolving Limits for the Telescope and the Microscope.*

THURSDAY (22nd).—CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parker Museum, Margaret-street, W.)—8 P.M. Lecture.—Mr. J. C. Meld: *Proposition in Education.* (Arranged by the British Child-Study Association.)

MARTIN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Harvelan Lecture:—*Dr. J. B. H. Rossell: Myelitis (illustrated by lantern slides).*
FRIDAY (23rd).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Clinical Evening for the Exhibition of Clinical Cases. Patients in attendance from 8 P.M. to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (19th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND—5 P.M. Arris and Gale Lecture:—*Mr. J. H. Watson: The Viscosity of the Blood.*

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. *Dr. G. Little: Clinique (Skins).* 5.15 P.M. Lecture:—*Dr. T. D. Savill: The Vaso-motor Element in Skin Diseases as a Guide to Diagnosis and Treatment.*

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—12 noon. *Dr. H. Wright: Pathological Demonstration.* 2.15 P.M. Medical and Surgical Clinics. 3 P.M. *Mr. Paget: Demonstration in Surgical Wards.* 5 P.M. *Dr. Ball: Middle-Ear Suppuration and its Treatment (with lantern slides).*

TUESDAY (20th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Goulstonian Lecture:—*Dr. H. B. Shaw: Auto-intoxication.*

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. *Dr. G. Rankin: Clinique (Medical).* 5.15 P.M. Lecture:—*Dr. H. D. Rolleston: The True Interpretation of Certain Clinical Manifestations often Ascribed to Liver.*

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. *Dr. R. Jones: The Legal Aspect of Insanity.*

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—*Dr. F. Buzzard: Disseminated Sclerosis.*

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—*Dr. G. P. Chappell: Clinical Medicine.*

WEDNESDAY (21st).—ROYAL COLLEGE OF SURGEONS OF ENGLAND—5 P.M. Arris and Gale Lecture:—*Mr. J. H. Watson: The Viscosity of the Blood.*

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. *Mr. H. L. Burnard: Clinique (Surgical).* 5.15 P.M. Lecture:—*Dr. R. Jones: Evolution in the Treatment of Mental Diseases.*

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 4.15 P.M. *Dr. Beddard: Demonstration in Medical Wards.* 5 P.M. *Mr. Bidwell: Plaster-of-Paris Splints. (Lecture I.)*

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—*Dr. D. Grant: Larynx.*

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—*Dr. A. Latham: The Selection of Cases for Sanatorium Treatment.*

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture:—*Dr. H. E. Spencer: Ovarian Tumours complicating Pregnancy and Labour.*

THURSDAY (22nd).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Lumsden Lecture:—*Dr. D. Ferrier: On Tabes Dorsalis.*

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. *Mr. Hutchinson: Clinique (Surgical).* 5.15 P.M. Lecture:—*Dr. C. R. Box: Congenital Diseases of the Heart.*

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 3 P.M. *Dr. Hood: Demonstration in Medical Wards.* 5 P.M. *Mr. Baldwin: Practical Surgery.*

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. *Dr. M. Dockrell: Erysipelas, I. Centrifugum; II. Telangiectic; III. Aphrocytic. (Chesterfield Lecture).*

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—*Dr. A. J. Whiting: Aortic Valvular Disease. (Post-Graduate Course.)*

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—*Dr. Garrod: Pyloric Obstruction in Infants.*

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. *Mr. J. Cantlie: Observations on the Part played by the Sigmoid Flexure in Health and Disease.*

FRIDAY (23rd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND—5 P.M. Arris and Gale Lecture:—*Mr. S. W. Curl: The Arterial Pulse, its Physiology and Pathology.*

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M. *Dr. D. Grant: Clinique (Ear).*

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2.15 P.M. Medical and Surgical Clinics. 5 P.M. *Dr. R. S. Taylor: Chlorosis.*

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively to THE EDITORS, and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1905, which was completed with the issue of Dec. 30th, were given in THE LANCET of Jan. 6th, 1906.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 15s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

THE LANCET AT THE RAILWAY BOOKSTALLS.

READERS who usually obtain their copies of THE LANCET at the bookstalls on the Great Western, the London and North Western, and the minor systems in connexion with these railways, are requested to communicate with the Manager, 423, Strand, London, W.C., if they experience any difficulty in getting copies of THE LANCET at these bookstalls.

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METEOROLOGICAL READINGS.

(Taken daily at 8.50 a.m. by Stewart's Instruments.)

THE LANCET Office, Mar. 15th, 1906.

Date.	Bar. meter reduced to sea level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation.	Max. Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Mar. 9	29.92	S.W.	0.11	69	59	42	41	43	Fine
" 10	30.03	S.W.	...	69	47	39	39	41	Overcast
" 11	29.72	S.W.	0.13	65	54	41	43	44	Cloudy
" 12	29.50	N.W.	0.25	67	42	37	36	40	Cloudy
" 13	29.68	N.	0.05	63	40	30	31	32	Snowing
" 14	29.69	N.E.	0.03	66	51	20	23	35	Overcast
" 15	29.91	S.W.	0.03	73	55	35	49	31	Overcast

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